CE 0123

V-2100G Infant Incubator

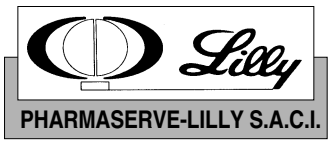
Operation Manual

TO THE OPERATOR AND THE PERSON IN CHARGE OF MAINTENANCE AND CARE OF THE UNIT:

- Read this Manual carefully before operating the unit.
- After reading this Manual, keep it where it is readily accessible for reference in case of need.
- This Manual contains description of all the functions available, including the oxygen controller and the infant's weight monitor.
  So please skip any section unrelated to your unit.

ATOM MEDICAL CORPORATION

The name and address of our authorized representative within the community are as stated below.



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INTRODUCTION

This Operation Manual deals with the specifications, operation and maintenance of the Atom Advanced Infant Incubator V-2100G. Atom is by no means responsible for any malfunction arising from a user ignoring the instructions for operation and maintenance described in this Manual as well as for any accident attributable to repair by someone other than technical personnel belonging to, or authorized by, Atom.
This Manual contains description of all the functions available, including the oxygen controller and the infant's weight monitor. So please skip any section unrelated to your unit.
Read this Manual carefully and familiarize yourself thoroughly with its contents before operating the unit. Keep this Manual where it is readily accessible for reference in case of need. If any technical problem should arise, please contact your Atom distributor.

⚠ CAUTION

This product is shipped without being disinfected. Be sure to clean and disinfect the unit before using it for the first time after purchase.

Used parts and other products past their useful lives should be disinfected and disposed of as medical wastes.

INTENDED USE

The Atom Advanced Infant Incubator model V-2100G is a closed-type incubator designed to provide an optimum clinical environment for newborn and premature neonates. The Infant Incubator is also designed to offer the clinical staff optimum conditions for observation and examination, temperature stabilization and management and post-operative care of their small patients. The Infant Incubator also incorporates the thermoregulatory ability to adjust the baby's skin temperature.
Features, such as Oxygen Controller and Weight Monitor, are also optionally available.

SAFETY INFORMATION

Instructions to ensure safe operation of the unit are found throughout this Manual. Please read the Manual carefully before operating the unit. Please follow the instructions in operating it.

[1] Basic Instructions

1.Follow the instructions for safe use of the unit.
Follow the operating instructions described in this Manual for safe use of the unit.
2.Inspect the unit on a periodical basis.
Periodical inspection is needed to use the unit under optimum conditions.
3.Never use the unit when faulty.
If any damage or malfunction of the unit should be noticed, stop using it immediately and contact your ATOM distributor.

[2] Definition of Warning Indication

Three levels of warning indication are used throughout this Manual and on the unit. They are defined as follows.

⚠ **DANGER :** A DANGER notice indicates **an immediately hazardous situation** which, if not avoided, will result in death or serious injury, serious damage to property such as total loss of use of equipment, and a fire.

⚠ **WARNING :** A WARNING notice indicates **an indirectly (potentially) hazardous situation** which, if not avoided, will result in death or serious injury, serious damage to property such as total loss of use of equipment, and a fire.

⚠ **CAUTION :** A CAUTION notice indicates a hazardous situation which, if not avoided, can result in **minor or moderate injury, partial damage to property, and loss of data stored in computers.**

[3] Definition of Marks

1. Marks to indicate caution or warning

Mark	《Title》and Indication
	《General attention》 Indicates unspecified general caution or warning.
	《Caution: Hot surface》 Indicates that the surface can be dangerously hot.

2. Marks to prohibit action

Mark	《Title》and Indication
	《General prohibition》 Indicates unspecified general prohibition.
	《Prohibition of disassembly》 Indicates prohibition of disassembly of the unit where it may cause an electric shock or other hazards.
	《Prohibition of use of fire》 Indicates prohibition of use of fire where an external use of fire may cause the unit to ignite under certain conditions.

3. Marks to give instructions for action

Mark	《Title》and Indication
	《General instruction》 Indicates unspecified general action on the part of the user.
	《Remove the power plug from the power outlet》 Instructs the user to remove the power plug from the power outlet in the case of malfunction or when thunder storm conditions threaten and lightning might occur.
	《Connect a ground wire》 Instructs the user to connect the ground wire without fail where the unit is provided with a ground terminal.

4. Marks used on the unit

Mark	《Title》and Indication
	Type BF equipment is applied here.
	Caution: See the accompanying documents.

WARRANTIES

This equipment is guaranteed by Atom Medical Corporation for a period of one year from the date of delivery to be free of any defects in both materials and workmanship when used normally for its intended purpose. Any parts of this equipment proving to be so defective will be repaired or replaced at no charge during the warranty period. In the following cases, however, actual expenses need to be paid even during the warranty period.

(1) Wear and tear of expendables.
(2) Trouble and damage due to improper handling, such as dropping the unit during transport or transfer.
(3) Trouble and damage due to a fire, salt, gas, extraordinary voltage, earthquake, electrical storm and flooding, or other natural calamities.
(4) Travel expenses in the case of a trip to an isolated island, a remote place, etc. for the purpose of repair.

Damage in shipment should be reported promptly to Atom accompanied by the certificate of the carrier concerned.

All correspondence concerning the equipment should specify the model name and the serial number.

⚠WARNING

Atom is by no means responsible for compensation for death, injury or damage to property if such loss should occur due to any of the following causes.

1. **Trouble or damage due to installation, maintenance or repair by someone other than technical personnel belonging to, or authorized by, Atom.**
2. **Trouble or damage of Atom products caused by a product of another company other than that supplied by Atom.**
3. **Trouble or damage due to modification, maintenance or repair using a part other than that specified by Atom.**
4. **Trouble or damage due to neglecting the operating precautions or operating instructions described in the Operation Manual of the unit.**
5. **Trouble or damage due to operation under ambient conditions, including electrical requirements and installation requirements, other than those described in the Operation Manual.**
6. **Trouble due to carelessness or improper modification.**
7. **Trouble or damage due to using secondhand equipment.**
8. **If an accessory device which does not meet the safety requirements of this unit is used in combination with the unit, the safety level of the resulting system may be compromised. When selecting an accessory device, the following point should be taken into consideration.**
   Evidence that the safety of the accessory device was certified in accordance with a national standard conforming to IEC60601-1 and/or IEC60601-1-1.

[1] Precautions on Jamming

⚠WARNING

Electro-Surgical apparatus, cellular phones and other devices which generate high-frequency noise can cause jamming to various electric equipment for medical use and thus result in malfunction. Since portable phones and other devices are often used in medical facilities, some measures should be taken to prevent jamming due to such devices. Portable phones and other devices which generate high frequency should not be used near the unit during its operation to prevent malfunction of the unit due to jamming.

[2] Responsibility for Care of Equipment

⚠CAUTION

It is the user (a hospital, a doctor's office, a clinic) that is responsible for the operation, maintenance and care of the electric equipment for medical use. The equipment should be used only by medical personnel.

[3] Prohibition of Modification

⚠WARNING

Do not disassemble or modify the unit. Otherwise, a fire, an electric shock or injury may result.

[4] Periodical Inspection

⚠CAUTION

Proper periodical inspection is needed in order to maintain and use the unit under optimum conditions.

[5] In Case of Trouble

⚠CAUTION

If any abnormal condition or trouble should occur to the unit, indicate on the unit that it is out of order and contact immediately your Atom distributor or service engineer. See the end of this Operation Manual for where to make contact.

If any abnormal condition or trouble should occur, do not use the unit until it has been repaired completely by a service engineer so as to prevent possible danger.

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[1] Operating Precautions

Please follow the operating instructions described in this Manual for safe use of the unit. The unit should be operated only by those who have been trained and instructed properly in its operation. The unit should be operated only for its intended use.

1-1. ⚠ DANGER

Death or serious injury, damage to equipment or a fire will result if the instructions given below are not followed.

Be sure to close the front admittance panel and access ports when the unit is in use.

Using the unit when the front admittance panel or an access port is left open may cause the infant to fall out of the baby compartment. Be sure to close the front admittance panel and access ports even when performing phototherapy on an infant inside the incubator.

If the incubator air temperature rises when performing phototherapy, proceed with phototherapy after placing the infant in a cot or an open incubator (infant warmer), according to the doctor's judgment.

Since growing infants release a high level of heat, the incubator air temperature may rise if you place the infant in the incubator and perform phototherapy. Also, if you use multiple phototherapy units at the same time, or if the room temperature is high, the incubator air temperature may rise. In this case, proceed with phototherapy after placing the infant in a cot or an open-type incubator, according to the doctor's judgment. Take sufficient care when using a cot, as it becomes difficult to watch the infant. Also, placing an ice bag inside the incubator has the effect of decreasing the temperature. However, be sure to close the front admittance panel and access ports in this case also.

Do not leave the unit unattended when the front admittance panel or an access port is open.

If the front admittance panel or an access port is left open, the infant may fall out of the baby compartment and even lose its life. Never leave the unit unattended when the front admittance panel or an access port is open.

If the front admittance panel, a snap-open access port or a hook slider should be found loose or faulty in any way, stop using the unit immediately and ask for repair.

The infant may fall out of the incubator.

Never place a body warmer or other possible ignition sources in or near the unit.

Use of oxygen will increase a risk of explosion or a fire.

A body warmer or other devices in which fire is used or which may generate a spark may cause explosion or a fire if used near the unit.

Do not use the unit in the presence of a flammable anesthetic gas.

The unit may cause explosion or a fire if used in the presence of such a gas.

Do not use ether, alcohol or other ignitable substances.

Even a small amount of ether, alcohol or other ignitable substances may cause a fire when mixed with the oxygen in the incubator.

Ground the unit securely.

Otherwise current leakage may cause an electric shock. To complete the ground connection, connect the power cord only to a 3P power outlet including a ground terminal and grounded properly. Do not operate the unit if you have any doubt about its ground connection.

Do not use near the unit any device generating high frequency.

Electro-Surgical apparatus, cellular phones and other devices which generate high frequency should not be used near the unit during its operation to prevent malfunction of the unit due to jamming.

Analyze arterial gas levels repeatedly when a high oxygen environment is required.

It is reported to be extremely important and essential, when the infant's conditions call for a high oxygen environment, to repeatedly analyze arterial gas levels in order to maintain the oxygen concentration in the incubator at a desired level. Follow the doctor's instructions in measuring the oxygen concentration because ignoring essential requirements may increase the risk of retinopathy of prematurity.

Do not jolt the unit or bump it against anything.

The screws or fixed parts may become loose.

1-2. ⚠ WARNING

Death or serious injury due to a fire or an electric shock will result if the instructions given below are not followed.

Be sure to follow the doctor's instructions in setting the incubator air temperature or the infant's skin temperature.

Be sure to follow the doctor's instructions in setting the relative humidity in the incubator.

Be sure to follow the doctor's instructions in setting the oxygen concentration in the incubator.

Oxygen for medical use should be used.

Be sure to bear in mind the following points during oxygen supply.

- Do not place a body warmer, a flashlight, oils and fats, or flammable vaporizable matters in the incubator.
- Use pure cotton for the infant's clothing and bed sheets, etc. Do not use any material that is easily charged with static electricity.
- Use pure cotton or fire-proofed materials for the clothing of doctors, nurses and those ambulance men who handle this unit.

Bear in mind the following points while using oxygen supply equipment.

- If oil, grease or a grease-like substance should get in contact with pressurized oxygen, a violent spontaneous ignition may occur. Do not let such substances stick to the oxygen pressure regulator, the oxygen cylinder valve, pipings, connections and other oxygen supply equipment.
- On a high pressure oxygen cylinder, use only a tested pressure reducing valve or pressure regulating valve indicated specifically for oxygen supply. Do not use such a valve for any gas other than air or oxygen. It is dangerous to use a valve to supply a gas other than air or oxygen and then to supply oxygen again.

Smoking is prohibited in the room where the unit is installed.
Do not place any possible ignition sources in the room.

Avoid damaging the power cord.

A damaged power cord may cause a fire or an electric shock.

- Do not pinch the power cord between the unit and the wall, a shelf or the floor.
- Do not place the power cord near a heating apparatus or heat it.
- Do not put anything heavy on the power cord.
- Always grasp the power plug with your hand to remove the power cord from the power outlet.

A damaged power cord should be replaced immediately with a new one.

Use only the power cord supplied with the unit.

Otherwise, a fire or an electric shock may result.

Before sanitizing the unit, ensure that the unit is electrically disconnected and that the unit and the heater have sufficiently cooled down.

Do not touch the power plug with a wet hand.

Touching the power plug with a wet hand may cause an electric shock.

Do not disassemble or modify the unit.

Disassembling or modifying the unit may cause a fire, an electric shock or injury.

Do not install the unit where it will be exposed to excessive humidity, dust or steam.

Installing the unit in such a place may cause a fire or an electric shock.

The power outlet should be located near the unit to prevent accidental contact with a trailing power cord. Use a separate power outlet for each unit.

Do not put many loads on one power outlet.

Connect the power cord only to a 3P power outlet in order to complete the ground connection.

Do not operate the unit if you have any doubt about its ground connection.

Ground peripheral electric equipment securely.

Never connect the unit to a power unit other than that specified.

The unit should be serviced only by qualified personnel.

Be sure to perform start-up inspection.

Using the unit without performing start-up inspection may let a defect pass unnoticed and cause a serious accident.

1-3. ⚠ CAUTION

Injury or damage to surrounding objects may result if the instructions given below are not followed.

Be sure to clean and disinfect the unit before using it for the first time after purchase.

The unit is shipped without being disinfected.

Always keep the unit warm to maintain the incubator air temperature at a fixed level during the standby mode.

Place the infant in the incubator only when the incubator air temperature has stabilized.

Do not twist or pull the cords by force.

If any defect should be found, ask an expert for repair without attempting to repair it yourself.

Remove the power plug from the power outlet before moving the unit to another place or when the unit is not going to be used for a long time.

Moving the unit to another place with the power plug connected to the power outlet will damage the power cord and may cause a fire or an electric shock.

Remove the power plug from the power outlet before cleaning or disinfecting the unit.

Cleaning or disinfecting the unit with the power plug connected to the power outlet may cause an electric shock.

Place the unit on a stable surface.

Placing the unit on an unstable platform or a tilted surface will cause it to fall or drop and may hurt someone. Check the strength of the place where the unit is to be placed or installed.

Install the unit out of reach of small children.

In performing phototherapy to the infant in the incubator, pay special attention to the infant's temperature and the incubator air temperature during the therapy.

The infant's skin temperature and the incubator air temperature may rise due to the radiant energy of light.

Do not install the unit in direct sunshine or near a heating apparatus.

Do not expose the unit to extraordinarily high temperature or excessive humidity.

Do not place anything heavy on the unit.

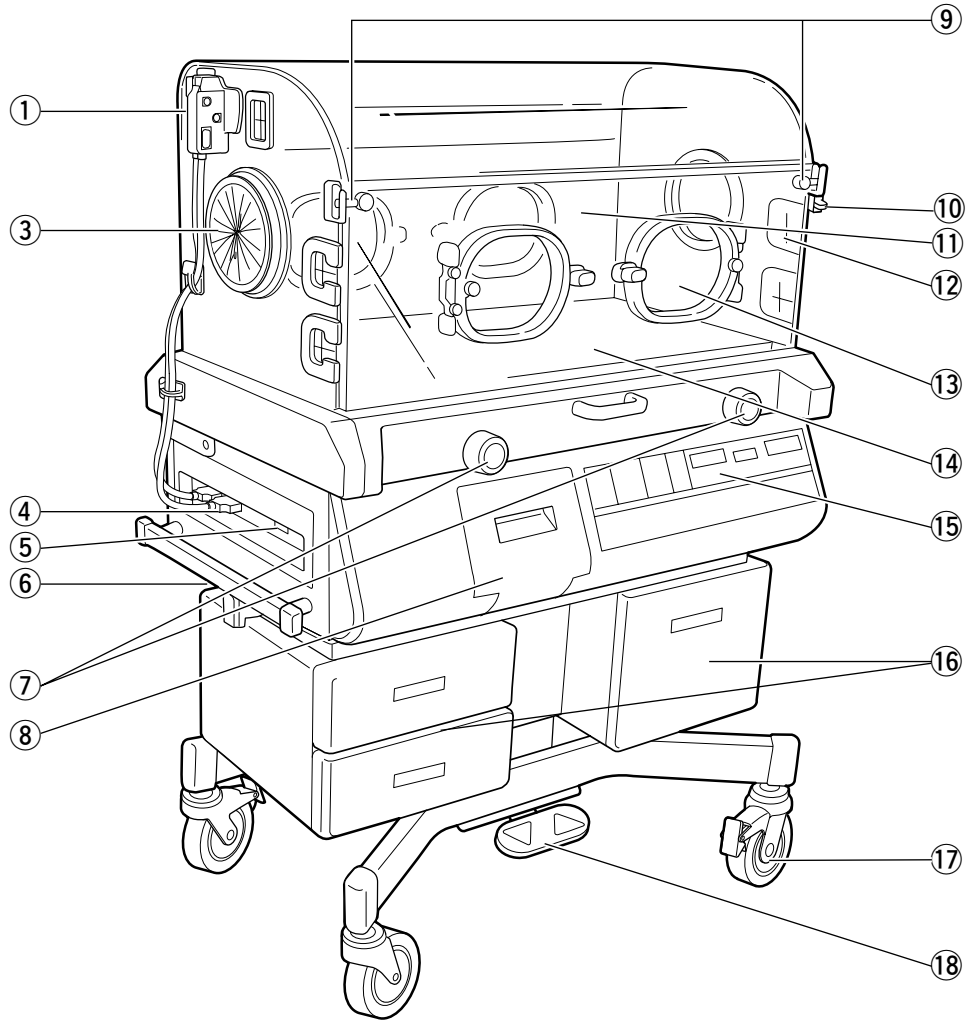
Check the operation of the peripheral devices.

If a device transmitting or receiving weak signals is installed near the unit, it may be affected by the electromagnetic waves generated by the latter. Check the operation of peripheral devices for any effect before using the unit in clinical settings. Stop using the unit immediately if any trouble is detected.

[2] Parts Identification

2-1. Main body

■ B.C type

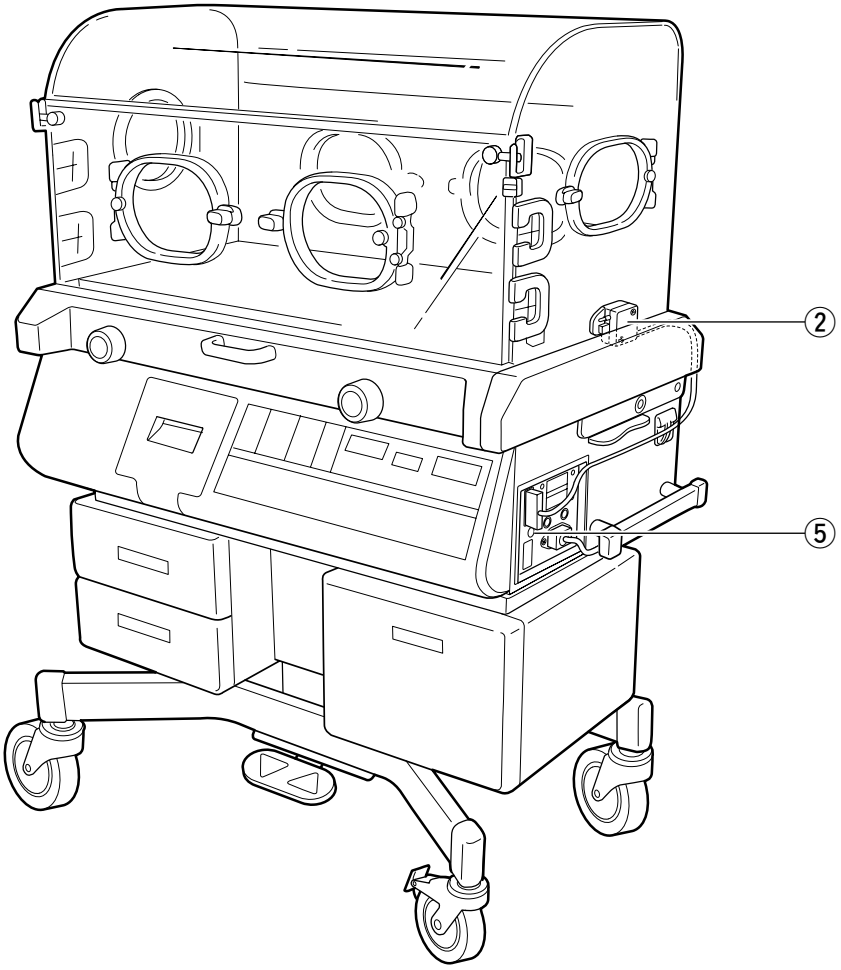


No.	Name
①	Sensor module (B,C type)
②	Sensor module (A type)
③	Iris access port
④	Relay box
⑤	Test switch
⑥	MF rail
⑦	Mattress platform tilting knob
⑧	Humidity chamber cover
⑨	Front admittance panel operating knob

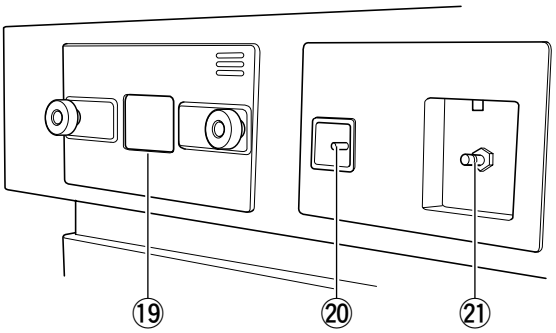
No.	Name
⑩	Front admittance panel operating lever
⑪	Front admittance panel
⑫	Tube introduction slit assembly
⑬	Snap-open access port
⑭	Mattress
⑮	Control panel
⑯	Drawer
⑰	Caster
⑱	Elevating pedal

Note: ⑮ Drawer (one-layer type and two-layer type) is optionally available.

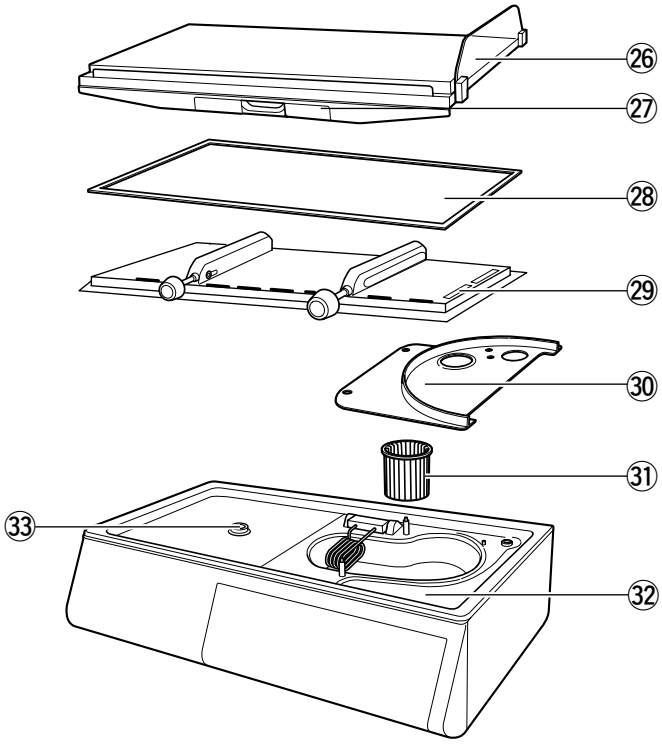
■ A type



■ Rear

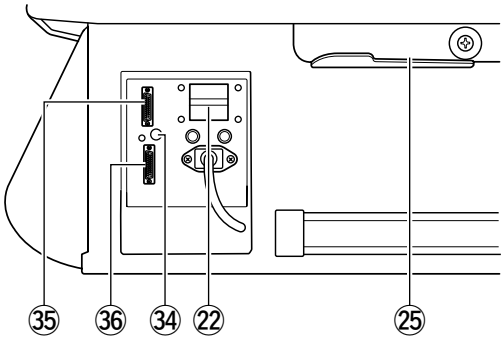


■ Inside

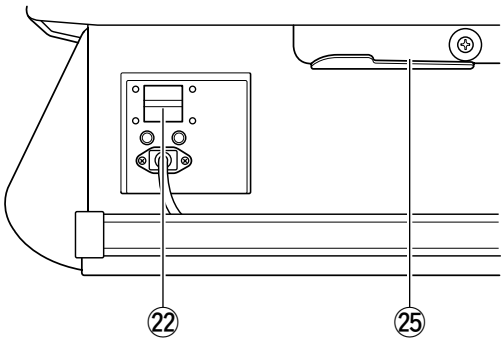


■ Right side (Power Unit)

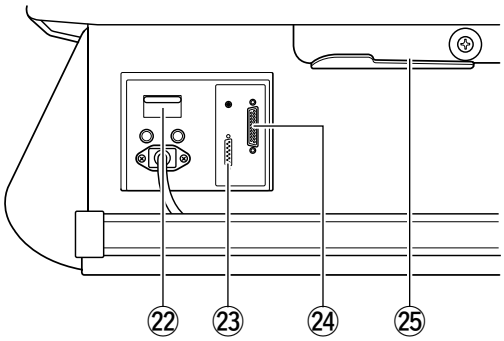
● A type



● B type



● C type

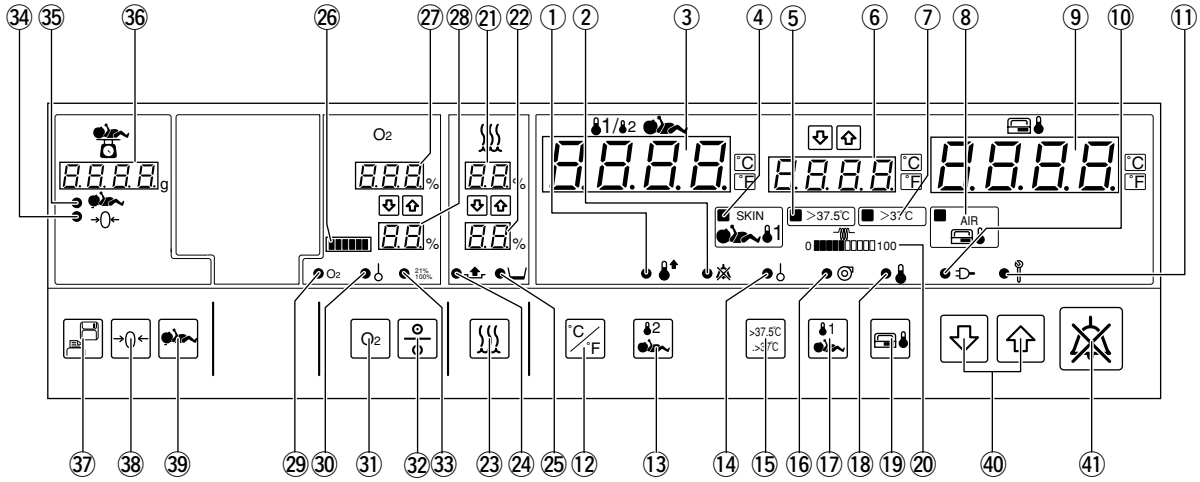


No.	Name
⑲	Filter cover
⑳	Oxygen connecting port 1
㉑	Oxygen connecting port 2 (to use the internal oxygen controller)
㉒	Power switch
㉓	Weight monitor connector
㉔	Printer connector
㉕	Hood stopper
㉖	Mattress platform
㉗	X-ray cassette tray

No.	Name
㉘	Top board packing
㉙	Top board
㉚	Fan cover
㉛	Fan
㉜	Conditioning chamber
㉝	Nozzle
㉞	Skin temperature connecting port
㉟	Sensor module connector (A type)
㊱	I/O connector (A type)

Note: ㉗ X-ray cassette tray is optinally available for A type

2-2. Control Panel



Temperature	
①	High temperature alarm indicator ・Servo Control: Illuminates when the incubator air temperature exceeds 40 ℃. ・Manual control: Illuminates when the incubator air temperature exceeds 38 ℃ (or 40℃ in the override mode).
②	Silence indicator Illuminates when an audible alarm is disabled.
③	Skin temperature display Displays a detected skin temperature digitally.
④	Servo Control indicator Illuminates when the incubator is operating in the Servo Control mode.
⑤	">37.5℃" indicator Illuminates when the incubator is operating in the Servo Control override mode.
⑥	Set temperature display ・Servo Control: Displays a set skin temperature digitally. ・Manual Control: Displays a set incubator air temperature digitally.
⑦	">37℃" indicator Illuminates when the incubator is operating in the Manual Control override mode.
⑧	Manual Control indicator Illuminates when the incubator is operating in the Manual Control mode.
⑨	Incubator air temperature display Displays a detected incubator air temperature digitally.
⑩	Power failure alarm indicator Illuminates when power supply is interrupted due to power failure, disconnected power plug or other causes.
⑪	System failure alarm indicator Illuminates when an abnormal condition is detected in self-diagnosis.
⑫	℃/°F selector switch Press this switch to change the temperature display unit from ℃ to °F and vice versa.

Temperature	
⑬	Skin temperature 2 switch (B,C type) As long as this switch is pressed the skin temperature display shows skin temperature 2.
⑭	Skin temperature probe alarm indicator Servo Control: Illuminates when the skin temperature probe is faulty or not connected. Manual Control: Illuminates when the skin temperature probe is faulty.
⑮	Override switch Press this switch while the SKIN indicator is flashing to select the override mode; the ">37.5℃" indicator will flash, and the high skin temperature range of 37.6-39.0℃ will be available. Press this switch while the AIR indicator is flashing to select the override mode; the ">37℃" indicator will flash, and the high incubator air temperature range of 37.1-39.0℃ will be available.
⑯	Fan alarm indicator Illuminates when the fan is not operating or when the fan, the fan cover and the top board are not attached properly.
⑰	Servo Control switch Press this switch to operate the incubator in the Servo Control mode.
⑱	Set point alarm indicator Servo Control: Illuminates when a detected infant's skin temperature deviates from the preselected temperature by more than ± 1 ℃. Manual Control: Illuminates when a detected incubator air temperature deviates from the preselected temperature by more than ± 3 ℃.
⑲	Manual Control switch Press this switch to operate the incubator in the Manual Control mode.
⑳	Heater output indicator Illuminates to indicate heater output in ten levels.

Humidity	
㉑	Relative humidity display Displays a detected relative humidity in the incubator digitally.
㉒	Set relative humidity display Displays a set relative humidity digitally.
㉓	Relative humidity selector switch Press this switch to set a relative humidity. When this switch is pressed, the relative humidity display will flash, and a relative humidity can be set. Select a desired setting by pressing an appropriate setting switch.
㉔	Humidity chamber off alarm indicator Illuminates when the humidity chamber is not positioned properly or humidity chamber cover is opened.
㉕	Low water level alarm indicator Flashes and illuminates when there is little water in the humidity chamber.

Oxygen Controller (B,C Type)	
㉖	Oxygen flow rate indicator Indicates a detected oxygen flow rate in six levels.
㉗	Oxygen concentration display Displays a detected oxygen concentration digitally.
㉘	Set oxygen concentration display Displays a set oxygen concentration digitally.
㉙	Oxygen concentration alarm indicator Flashes when a detected oxygen concentration deviates from the preselected level by more than ± 3%.
㉚	Oxygen sensor indicator Illuminates when the oxygen sensor is faulty.
㉛	Oxygen concentration selector switch Press this switch to set an oxygen concentration. When this switch is pressed, the set oxygen concentration display will flash, and an oxygen concentration can be set. Select a desired setting by pressing an appropriate setting switch.
㉜	ON/OFF switch Press this switch to turn the oxygen controller on/off.
㉝	Calibration indicator Flashes when O_2 sensor calibration is in progress.

Weight Monitor (C Type)	
㉞	TARE SUBTRACTED indicator Illuminates when net weight is displayed.
㉟	STABILIZED indicator Illuminates when a measured weight on the display has stabilized.
㊱	Weight display Displays a detected weight digitally.
㊲	STORE switch Press this switch to store (record) a displayed weight.
㊳	ZERO switch Press this switch to have net weight displayed.
㊴	WEIGHT switch Press this switch to weigh.

Others	
㊵	Setting switch Press this switch to set temperature, relative humidity, SpO_2/pulse rate alarm limits, etc. to a desired level. Every time ⇧ switch is pressed, a setting increases. Every time ⇩ switch is pressed, a setting decreases.
㊶	Alarm silence/reset switch Press this switch to silence an audible alarm or to reset an alarm condition.

[3] Preparation before Use

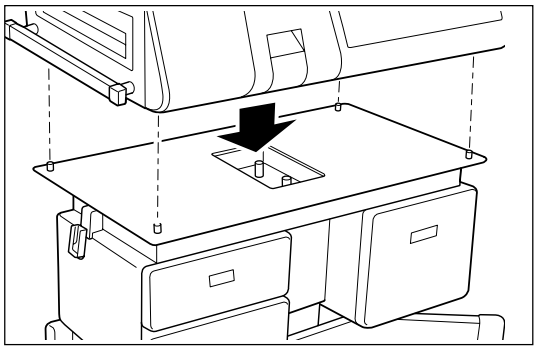
3-1. Assembly

The main body of the incubator and the cabinet or the HL stand are separately packed when shipped from the factory. Assemble the separate components correctly.

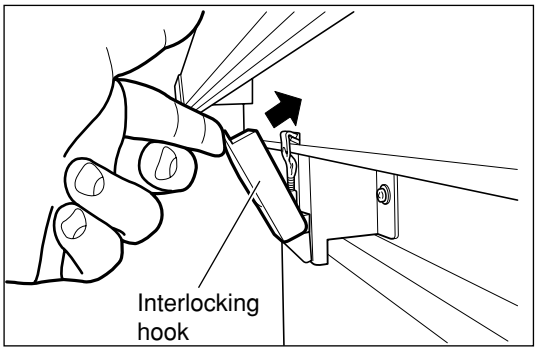
⚠ CAUTION

At least two people should join forces in assembling the unit for safety's sake.

(1) Place the main incubator body on the cabinet or the HL stand in such a way that the control panel of the main body and the front surface of the cabinet or the HL stand may be positioned in the same direction. The metal fittings on the four corners of the upper surface of the cabinet or the HL stand should fit in the sockets in the bottom surface of the main body without leaving any space between them or without tilting.



(2) Fit in the interlocking hooks on both sides of the cabinet or the HL stand with the metallic parts on the main incubator body and lock securely.



⚠ WARNING

Fix the main incubator body reliably to the cabinet or the HL stand by fitting in the interlocking hooks securely with the metallic parts. Otherwise the main incubator body might tip over and fall down when force is applied in opening the hood. Never move or operate the incubator before the main incubator body is fixed securely to the cabinet or the HL stand. Check that the interlocking hooks are locked in routine inspection.

3-2. Where to Install the Infant Incubator

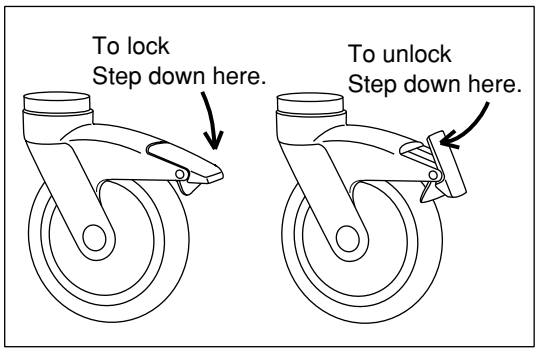
Install the incubator in a horizontal place convenient for work. Avoid installing it near a heating apparatus, by the window or where an open fire is used.

⚠ CAUTION

Avoid installing the incubator in direct sunshine, near a stove or a radiator, in the current of an air-conditioner, or by a cold window so that it may not be affected directly by such external thermal conditions.

3-3. Locking the Casters

(1) When the incubator is installed in a desired place, lock the two casters on the cabinet or the HL stand.
(2) To lock a caster, step down on the stopper tip for the stopper to be in the LOCKED position.
(3) To unlock a caster, place the stopper in the UNLOCKED position.



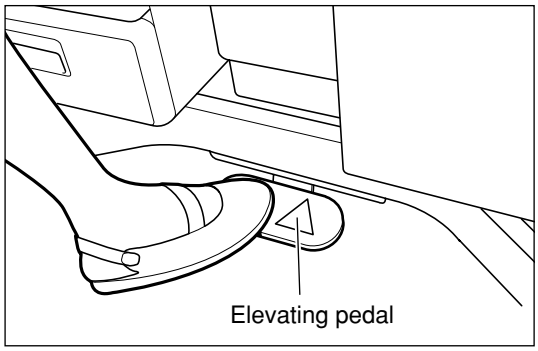
⚠ CAUTION

Install the cabinet or the HL stand of the incubator on a horizontal and steady floor. Step on the two caster stoppers to lock the casters securely. To move the incubator to another place, be sure to unlock the casters.

3-4. Adjusting the HL Stand (HL stand type)

(1) The height of the HL stand can be adjusted if necessary by stepping on an appropriate side of the elevating pedal. Be sure to connect the power plug of the HL stand to the power outlet.

(2) To raise the HL stand, step continuously on the right side(△) of the elevating pedal until a desired height is achieved. To lower it, step continuously on the left side(▽) of the elevating pedal until a desired height is achieved.



⚠ CAUTION

The operation of the elevating pedal should be limited to three minutes per hour.

3-5. Power Outlet and Grounding

⚠ WARNING

The power outlet should be located near the unit to prevent accidental contact with a trailing power cord. Use a separate power outlet for each unit.

Do not put many loads on one power outlet.

Connect the power cord only to a 3P power outlet in order to complete the ground connection.

Do not operate the unit if you have any doubt about its ground connection.

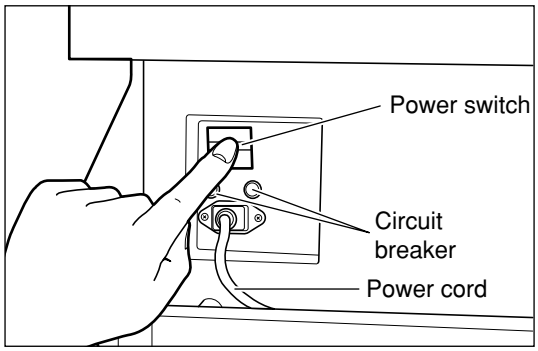
Ground peripheral electric equipment securely.

Never connect the unit to a power unit other than that specified.

The unit should be serviced only by qualified personnel.

3-6. Power Cord and Power Switch

(1) Connect the power cord to the connector of the power unit on the side panel of the main body. Then connect the power plug on the other end of the power cord to the power outlet.
(2) Press the power switch to turn power on.



■ Memory function

If power supply should be interrupted due to power failure, disconnection of a power plug or other causes, the preselected settings excluding relative humidity and the items to be displayed will be retained in the memory, so that it is not necessary to set them anew when power returns. Thus, the last selected settings and display items will be displayed when the power switch is pressed ON.
However, since there are no memory functions for humidity control and the oxygen controller, it is necessary to operate each switch again to reset the functions after resumption of power.

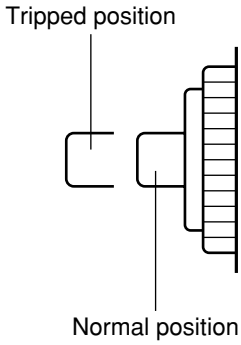
⚠ CAUTION

When the oxygen controller is working, if the power supply is interrupted due to a power failure, disconnection of the power plug or the like, the oxygen supply does not restart even if power resumes. Press the ON/OFF switch of the oxygen controller for about one second to set the oxygen controller to ON again. The oxygen concentration value which was set before the power interruption is displayed and oxygen supply resumes. Set the humidity control in the same way.

■ How to reset the circuit breaker

If an overcurrent condition should occur during the operation of the unit, the circuit breaker of the unit will be tripped to prevent possible accidents. To reset the breaker, take the following steps:

(1) Press the power switch to turn power off.
(2) Allow at least one minute after the breaker was tripped, and then depress the breaker pushbutton to reset it to the "Normal" position.
(3) Press the power switch to turn power on.
If the circuit breaker should be tripped again, contact your Atom distributor.



⚠ CAUTION

To prevent a malfunction, allow at least one minute or so after the activation of the circuit breaker before pressing the pushbutton.

3-7. Rechargeable Battery

The unit contains a rechargeable battery intended to give an alarm when the power supply has stopped. The battery needs charging in any of the following cases:

- immediately after purchasing the unit
- after the activation of a mains failure alarm
- after the unit has not been used for a long time
- when no alarm or only a feeble alarm sounds on the activation of a mains failure alarm by setting the power switch to the ON position with the power cord off

The battery is charged automatically while the unit is connected to the wall outlet.
It takes about 50 hours for a completely discharged battery to be fully recharged.
The rechargeable battery should be replaced with a new one every four years or so.

⚠CAUTION

If a mains failure alarm does not sound even after recharging, contact your Atom distributor.

3-8. Start-up Inspection

Before using the unit, check it carefully for any trouble, contamination, missing parts or defective parts to make sure that it can be operated safely.

⚠WARNING

Be sure to perform start-up inspection. Using the unit without performing start-up inspection may let a defect pass unnoticed and cause a serious accident.

⚠DANGER

Always check the front admittance panel operating knobs and the hook sliders of the snap-open access ports for proper operation. If the front admittance panel or a snap-open access port should not close securely, stop using the uni and ask for repair.

[4] Incubator Air Temperature Control

Air temperature in the incubator can be controlled in two user selectable modes. In the Manual Control mode, the incubator air temperature is controlled to a preselected level, in the Servo Control mode, a skin temperature probe is attached to the infant and the heater output is controlled to maintain the infant's skin temperature at a preselected level.

4-1. Setting the Incubator Air Temperature (Manual Control)

Practice and master the operation procedure before placing the infant in the incubator, and conduct temperature tests with the unit empty to check that it operates normally.

⚠WARNING

Be sure to follow the doctor's instructions in setting the incubator air temperature.

⚠CAUTION

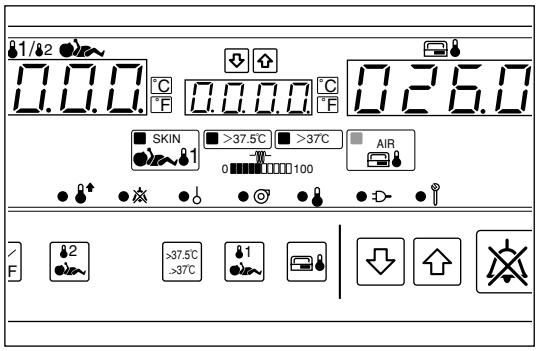
Practice and master the operation procedure before placing the infant in the incubator, and conduct temperature tests with the unit empty to check that the incubator operates normally.

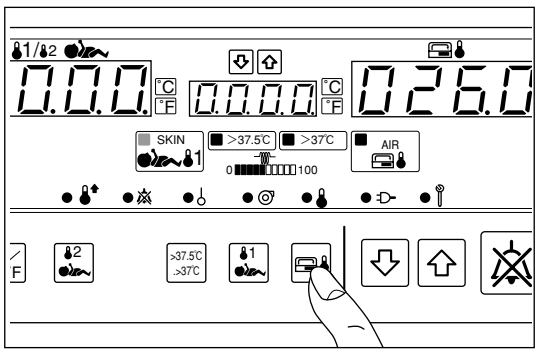
While the infant is in the incubator, check the heater output, the incubator air temperature, the relative humidity and the oxygen concentration continuously to make sure that nothing is the matter with the infant.

Check that the air outlets are not blocked with a diaper or a gauze. If they are blocked, the temperature and the relative humidity in the incubator cannot be controlled correctly.

4-1-1. Incubator air temperature display and setting

(1) When power is applied to the unit, the AIR or the SKIN indicator illuminates.
Check that the incubator air temperature and the set temperature are displayed simultaneously.
If the SKIN indicator should illuminate, press the AIR switch for about one second and switch to the Manual Control mode.
Temperature can be displayed either in Centigrade (℃) or in Fahrenheit (°F). To change the display unit from one to the other, use the ℃/°F selector switch.
The incubator air temperature is displayed in the range of 20.0-42.0℃ in 0.1 ℃ increments. "Lo" will be displayed if it is 19.9 ℃ or lower; "HI" will be displayed if it is 42.1 ℃ or higher.
The set temperature can be selected in the range of 23.0-37.0 ℃ in 0.1℃ increments. If the range of 37.1-39.0℃ is desired, select the override mode.

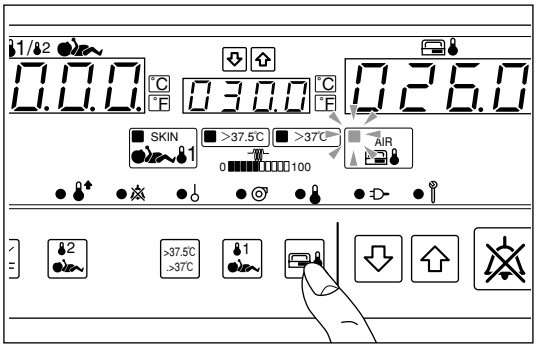




⚠CAUTION

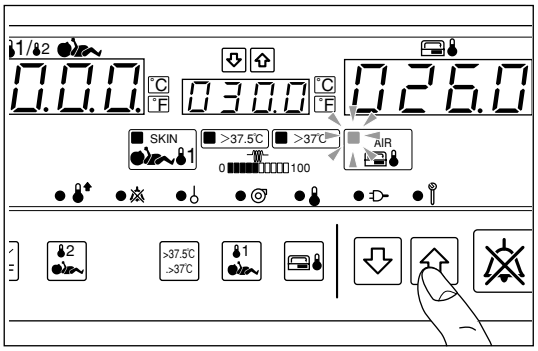
The set temperature should be at least +3 ℃ higher than the ambient temperature. If a phototherapy unit, a heating humidifier, etc. is used with the incubator, the set temperature should be at least +5 ℃ higher than the ambient temperature. A lower setting in either case cannot be controlled correctly.

(2) To set or change the incubator air temperature, press the AIR switch for about one second. The AIR indicator will begin to flash.
While it is flashing, press an appropriate setting switch (⇧ or ⇩) to set the incubator air temperature to a desired level.
The set temperature can be changed as long as the AIR indicator is flashing. It will stop flashing to remain on when the setting procedure is completed. Then the heater will begin functioning.

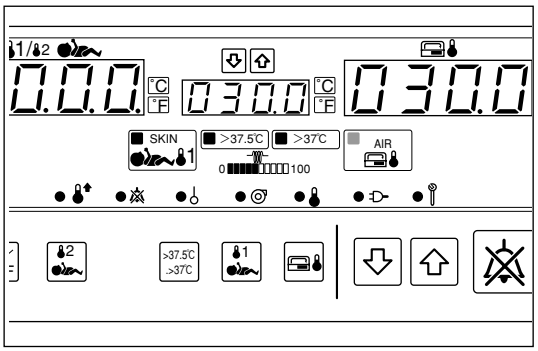


⚠WARNING

Be sure to follow the doctor's instructions in setting the incubator air temperature.

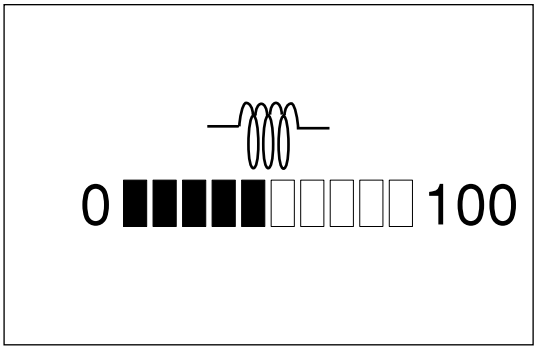


(3) Allow about 50-60 minutes for the incubator air temperature to stabilize (depending on the ambient temperature).
The incubator air temperature is regarded as stabilized when the incubator air temperature reading is equal or close to the set temperature.



■ Heater output indicator

The heater output indicator indicates the amount of heat supply required to maintain the incubator air temperature at a desired level. As the incubator air temperature rises toward the set temperature, the heat supply decreases, and with it the output level shown on the heater output indicator also decreases gradually from 100. When the incubator air temperature has reached the set temperature, the reading on the indicator remains within the balanced heat supply range. Thus the heater output indicator helps grasp the changes in incubator air temperature control.



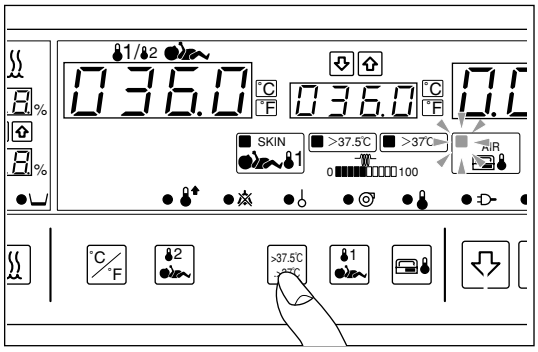
4-1-2. Setting the incubator air temperature in the override mode (Manual Control)

The incubator air temperature can be set above 37.0℃ in the range of 37.1 - 39.0℃ by pressing the override switch ON.

（1）Press the AIR switch for about one second. With the AIR indicator flashing, press the override switch ON.

（2）Press an appropriate setting switch (⇧ or ⇩) to set the incubator air temperature to a desired level in the range of 37.1-39.0 ℃ in 0.1 ℃ increments.
The ">37℃" indicator remains on during the air temperature level in the range of 37.1 - 39.0 ℃.

（3）The override mode will be canceled automatically if the temperature is set to 37.0 ℃ or lower.



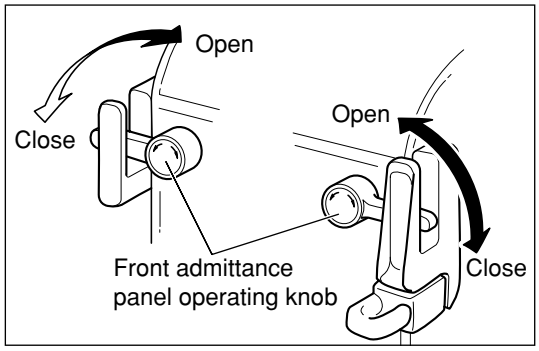
4-1-3. Placing the infant in the incubator

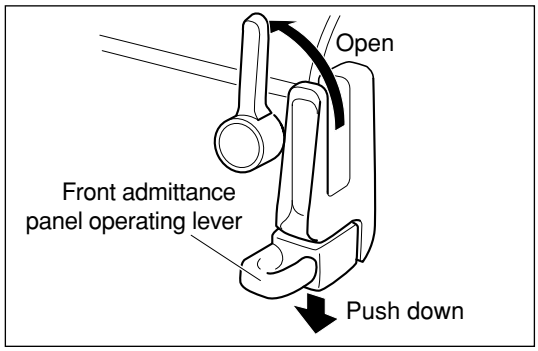
（1）Turn the front admittance panel operating knobs to open side and then open gently the front admittance panel with pushing down the front admittance panel operating lever.

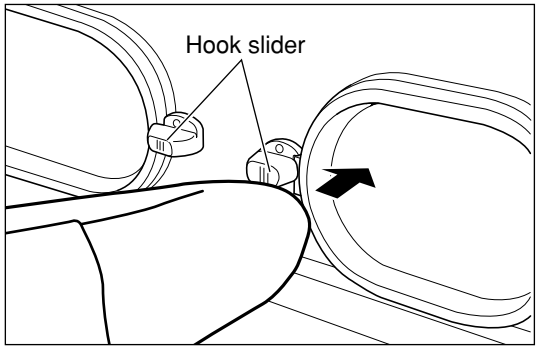
（2）Place the infant on the center of the mattress with the head to the left and the legs to the right.

（3）After placing the infant, close the front admittance panel and turn the front admittance panel operating knobs to close side to close the panel securely.

（4）A gentle touch by the elbow on the hook slider will open the snap-open access port through spring action.
To close the port, push the port door until it closes completely.







⚠DANGER

Always check the front admittance panel operating knobs and the hook sliders of the snap-open access ports for proper operation. If the front admittance panel or a snap-open access port should not close securely, stop using the unit and ask for repair.

Do not open the front admittance panel or access ports in order to lower the incubator air temperature.
It's rather dangerous that heater output will increase to keep the incubator air temperature.

⚠DANGER

After the infant is placed in the incubator, check again that the front admittance panel and the access ports are all closed securely.

For the infant's safety, never leave the incubator unattended when the front admittance panel or an access port is open.

⚠CAUTION

Place the infant in the incubator only after the incubator air temperature has stabilized.

Opening the front admittance panel or the access ports or using a sheet with which to cover the infant, an oxygen headbox, etc. in the incubator will change the air circulation pattern inside and may have effects on thermal uniformity, thermal change, the detection and control of the incubator air temperature, and the infant's skin temperature.

Avoid opening the entire hood to place the infant in the incubator. It may cause the incubator air temperature to fluctuate greatly.

Never open the entire hood when the infant is in the incubator. Cords and tubes may damage the infant. All procedures should be performed through the front admittance panel or the access ports.

4-1-4. Skin temperature monitoring

To monitor the skin temperature of the infant placed in the incubator, it is necessary to attach a skin temperature probe to the infant. The skin temperature probe is connected to the sensor module.

The sensor module has two ports. But the A-type unit has only one port.

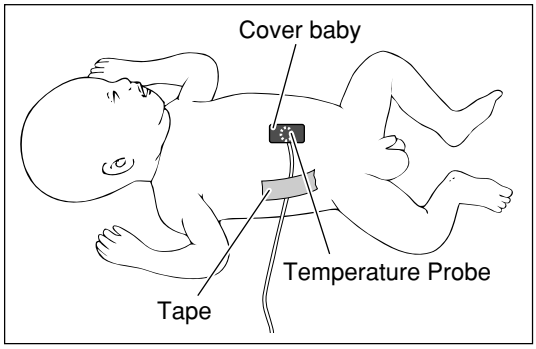
The temperature detected by the skin temperature probe connected to the port 1 on the sensor module will always be displayed on the skin temperature display. In the Servo Control mode, the probe connected to the port 1 will serve as a probe for servo control.

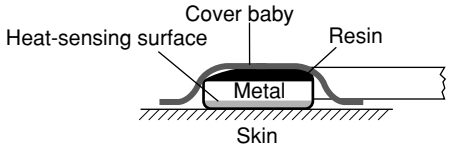
The temperature detected by the probe connected to the port 2 will be displayed on the skin temperature display only when the SKIN 2 switch is pressed. The probe connected to the port 2 cannot be used in the Servo Control mode.

The skin temperature probe that can be connected to the port 1 is yellow. The skin temperature probe that can be connected to the port 2 is white. The yellow probe (accessory) is usually used in skin temperature monitoring and in servo control. On the other hand, to monitor the infant's skin temperature at two different sites at the same time, it is necessary to connect the white probe (option) to the port 2 in addition to the yellow skin temperature probe connected at port 1.

(1) Insert the cable plug of the skin temperature probe firmly into the port 1 on the sensor module on the left side of the hood.
As for the A-type unit, connect the skin temperature probe firmly to the connecting port on the power unit.

(2) Pass the plug of the skin temperature probe cable through the tube introduction slit assembly on the side of the hood and take it out of the incubator.





⚠WARNING

Do not place the skin temperature probe under the infant.
Do not use it as a rectal probe.

⚠CAUTION

Follow the doctor's instructions as to where to attach the skin temperature probe to an infant in a prone position.

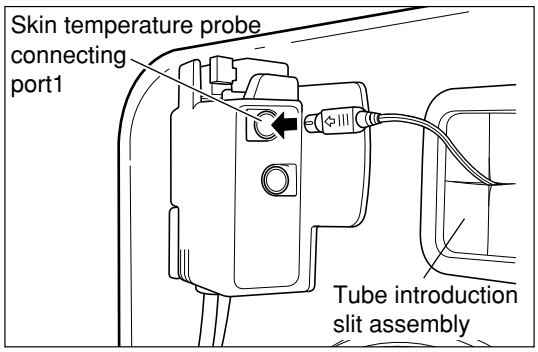
(3) Before attaching the skin temperature probe to the infant, clean the attachment site with alcohol or lukewarm water to get rid of any fetal fat or dirt.

(4) Attach the skin temperature probe to a site between the navel and the xiphoid process on the infant's abdominal median line using the "cover baby". Affix a piece of tape at a little distance from the tip of the probe to fix the probe securely to the skin.
An optional minimum-size skin temperature probe is recommended for a very small infant or depending on attachment site.

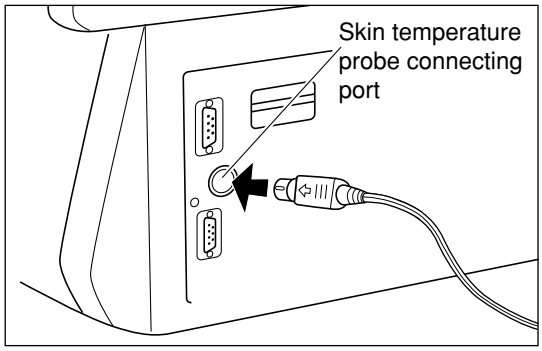
(5) The temperature detected by the skin temperature probe will be displayed on the skin temperature display.
If a disposable skin temperature probe is used, insert the plug of the connecting cable firmly into the skin temperature probe connecting port 1, and connect the connector of the connecting cable of the disposable skin temperature probe to the connector on the other end.

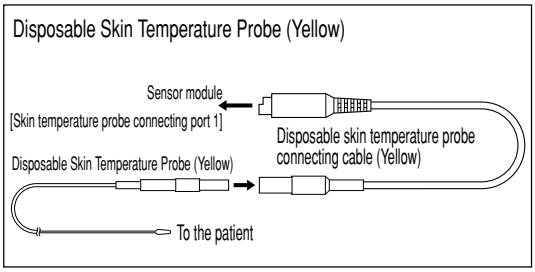
(6) Allow 4-5 minutes after connecting the skin temperature probe for the skin temperature reading to stabilize before starting skin temperature monitoring.
The skin temperature is displayed in the range of 30.0-42.0℃ in 0.1 ℃ increments. "Lo" will be displayed if it is below 30.0℃; "HI" will be displayed if it is above 42.0℃.

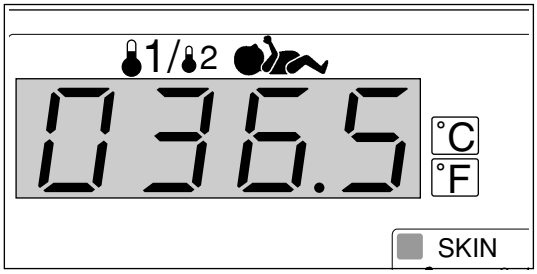
■ B.C type



■ A type




Disposable Skin Temperature Probe (Yellow)
Sensor module
[Skin temperature probe connecting port 1]
Disposable skin temperature probe connecting cable (Yellow)
Disposable Skin Temperature Probe (Yellow)
To the patient



⚠ CAUTION

Be sure to connect the yellow skin temperature probe to the skin temperature probe connecting port 1.

■To monitor the skin temperature at two different sites

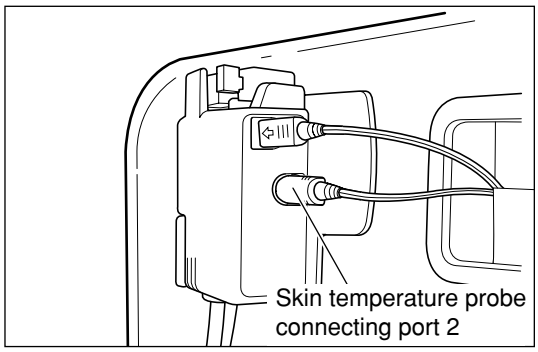
The A-type unit doesn't have the following functions.

（1）Connect the "Yellow" probe to the skin temperature connecting port1.

（2）Connect the "White" probe to the skin temperature connecting port2.

（3）Take the white probe into the incubator through the tube introduction slit assembly on the side of the hood as well as yellow one.

（4）As long as the SKIN2 switch is pressed, the skin temperature detected by the white probe is displayed.



⚠ CAUTION

If the thermistor of the skin temperature probe is attached improperly to the infant, or if it should be dislodged accidentally from the infant, the skin temperature cannot be detected accurately. In Servo Control operation, in particular, be very careful not to heat the infant excessively.

Be sure to connect the white skin temperature probe to the skin temperature probe connecting port 2.

4-2. Setting the Skin Temperature (Servo Control)

⚠ CAUTION

Practice and master the operation procedure before placing the infant in the incubator, and conduct temperature tests with the unit empty to check that the incubator operates normally.

While the infant is in the incubator, check the heater output, the incubator air temperature, the relative humidity and the oxygen concentration continuously to make sure that nothing is the matter with the infant.

The Servo Control system controls the incubator air temperature by giving priority to the maintenance of the infant's skin temperature. It detects the infant's skin temperature with a skin temperature probe attached to the infant's abdomen and maintains an optimum thermal environment through feedback control. In the Servo Control mode, the incubator air temperature is controlled automatically to maintain the infant's skin temperature at a constant level (i.e. set temperature); if the infant's skin temperature is lower than the set temperature, the incubator air temperature will rise, while if the infant's skin temperature is higher than the set temperature, the incubator air temperature will fall.

■ **Mechanism to prevent low incubator air temperature**

The incubator is provided with a mechanism to prevent the incubator air temperature from falling unnecessarily due to infant's fever, etc.

If the infant's skin temperature should exceed the set temperature by not more than 0.5℃, the incubator air temperature will not fall below the infant's skin temperature by more than 5 ℃. If the infant's skin temperature should exceed the set temperature by more than 0.5 ℃, the incubator air temperature will not fall below 25℃. Thus, during the Servo Control mode, the incubator air temperature is controlled in the range of 25-38 ℃.

Example: If the infant's skin temperature should rise to 36.8 ℃ with the set temperature at 36.5 ℃, the incubator air temperature will not fall below the infant's skin temperature by more than 5℃, so that it will not fall below 31.8 ℃. If the infant's skin temperature should rise to 37.2 ℃ and thus exceed the set temperature by more than 0.5℃, the incubator air temperature will not fall below 25 ℃.

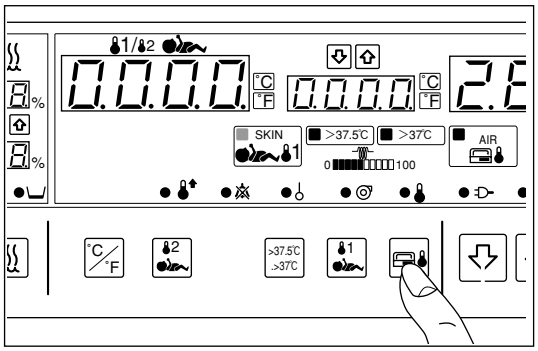
4-2-1. Preparation

⚠ CAUTION

Before placing the infant in the incubator, raise the incubator air temperature to a certain level in the Manual Control mode and then select the Servo Control mode.

(1) After power on, check that the AIR indicator is on. If the SKIN indicator should illuminate, press the AIR switch for about one second and select the Manual Control mode.

(2) Follow the procedure described in 4-1-1 "Incubator air temperature display and setting", and set the incubator air temperature in the Manual Control mode.



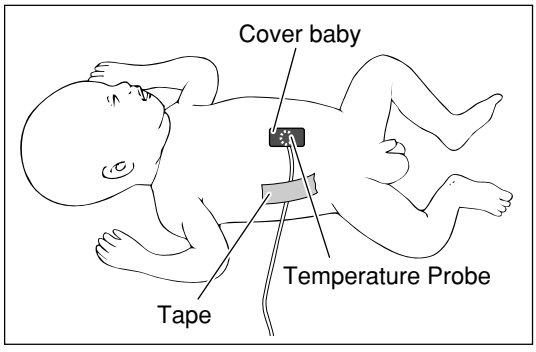
4-2-2. Placing the infant in the incubator

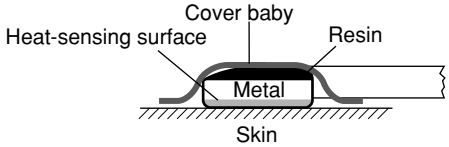
Allow about 50-60 minutes for the incubator air temperature to stabilize. After it has stabilized, place the infant in the incubator by following the procedure described in 4-1-3 "Placing the infant in the incubator".

4-2-3. Attaching the skin temperature probe

(1) Before attaching the skin temperature probe to the infant, clean the site of attachment with alcohol or lukewarm water to get rid of any fetal fat or dirt.

(2) Attach the skin temperature probe to a site between the navel and the xiphoid process on the infant's abdominal median line using the "cover baby". Affix a piece of tape at a little distance from the tip of the probe to fix the probe securely to the skin.
An optional minimum-size skin temperature probe is recommended for a very small infant or depending on the site of attachment.





⚠WARNING

Do not place the skin temperature probe under the infant.
Do not use it as a rectal probe.

⚠CAUTION

Follow the doctor's instructions as to where to attach the skin temperature probe to an infant in a prone position.

(3) Pass the plug of the skin temperature probe cable through the tube introduction slit assembly on the side of the hood and take it out of the incubator.

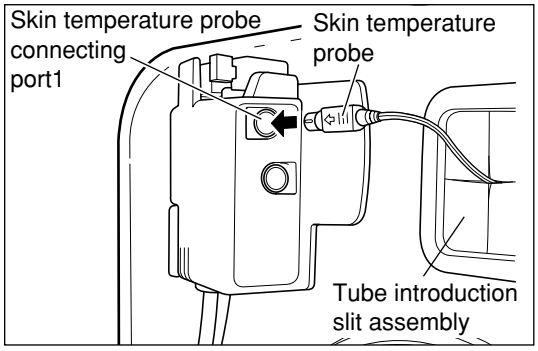
(4) Insert the cable plug of the skin temperature probe firmly into the skin temperature probe connecting port 1 on the sensor module on the left side of the hood.
As for the A-type unit, connect the skin temperature probe firmly to the connecting port on the power unit.
The temperature detected by the skin temperature probe will be displayed on the skin temperature display.
If a disposable skin temperature probe is used, insert the plug of the connecting cable firmly into the skin temperature probe connecting port 1, and connect the connector of the connecting cable of the disposable skin temperature probe to the connector on the other end. The temperature detected by the skin temperature probe will be displayed on the skin temperature display.

⚠CAUTION

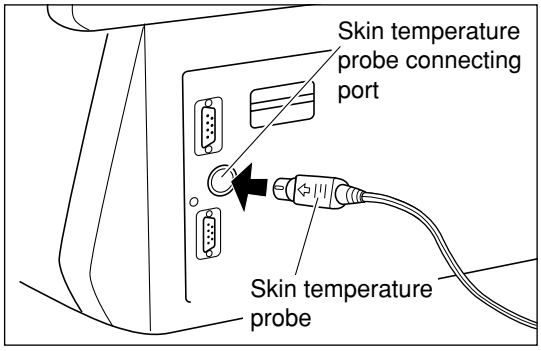
In the Servo Control mode, be sure to connect the yellow skin temperature probe to the skin temperature probe connecting port 1 (for Servo only). The white skin temperature probe should be connected to the skin temperature probe connecting port 2 (for monitoring only). Servo control cannot be achieved with the white skin temperature probe.

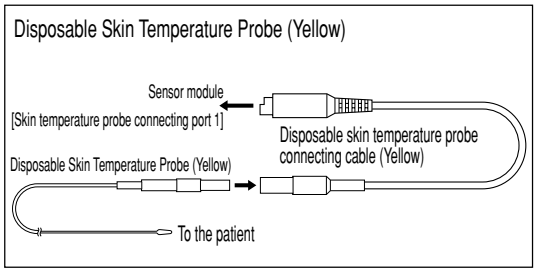
(5) In 4-5 minutes after attaching the skin temperature probe, check that the infant's skin temperature displayed on the skin temperature display is stable.
It is displayed in the range of 30.0-42.0℃ in 0.1℃ increments.
"Lo" will be displayed if it is below 30.0℃; "HI" will be displayed if it is above 42.0℃.

■ B.C type



■ A type

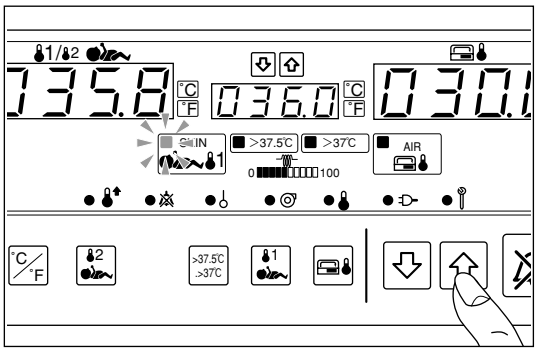



Disposable Skin Temperature Probe (Yellow)
Sensor module
[Skin temperature probe connecting port 1]
Disposable skin temperature probe connecting cable (Yellow)
Disposable Skin Temperature Probe (Yellow)
To the patient

4-2-4. Switching to the Servo Control mode

（1）Press the SKIN switch for about one second and switch to the Servo Control mode.
The SKIN indicator illuminates, and at the same time, the set temperature is switched from the incubator air temperature to the skin temperature.

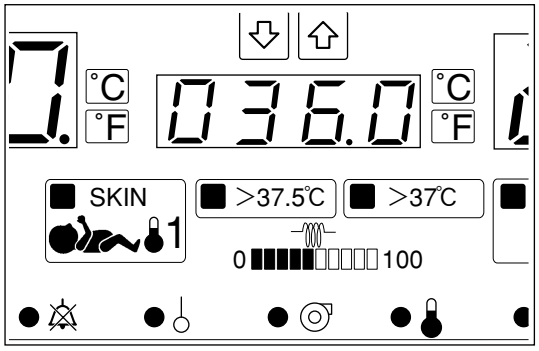
（2）To set or change the skin temperature, press the SKIN switch for about one second. The SKIN indicator will begin to flash. While it is flashing, press an appropriate setting switch (⇧ or ⇩) to set the skin temperature to a desired level.
The set temperature can be changed as long as the SKIN indicator is flashing. It will stop flashing and remain on when the setting procedure is completed. Then the heater will begin functioning.



⚠WARNING

Be sure to follow the doctor's instructions in setting the skin temperature. The "skin temperature" is defined as the infant's "abdominal skin temperature" detected by the skin temperature probe.

（3）As the skin temperature rises toward the set temperature, the output level shown on the heater output indicator decreases gradually from 100 and stabilizes.
It may increase temporarily when the mechanism to prevent low incubator air temperature has activated.
The heater output indicator indicates, in the Servo Control mode, the amount of heat supply required to maintain the infant's skin temperature at a desired level.



⚠WARNING

Attach the skin temperature probe securely to the infant's abdominal wall. The skin temperature cannot be detected accurately if the skin temperature probe should be dislodged accidentally from the infant's abdominal wall, or otherwise attached improperly to the infant's abdominal wall. The skin temperature cannot be detected accurately if the skin temperature probe should be warmed by being covered with a blanket, diapers or the infant's arm, or if it should be cooled by getting wet with the infant's urine or some medical fluid.

If the infant should produce heat spontaneously or should have developed a fever, the incubator air temperature may drop and/or some other adverse effects may result.

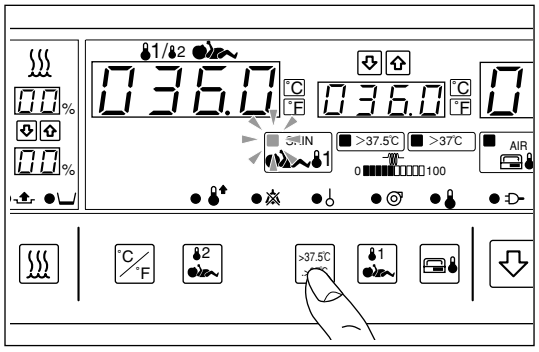
4-2-5. Setting the skin temperature in the override mode (Servo Control)

The incubator skin temperature can be set above 37.5℃ in the range of 37.6 - 39.0℃ by pressing the override switch ON.

(1) Press the SKIN switch for about one second. With the SKIN indicator flashing, press the override switch ON.

(2) Press an appropriate setting switch (⇧ or ⇩) to set the incubator skin temperature to a desired level in the range of 37.6 - 39.0 ℃ in 0.1 ℃ increments. The ">37.5℃" indicator remains on during the air temperature level in the range of 37.6 - 39.0℃.

(3) The override mode will be canceled automatically if the temperature is set to 37.5 ℃ or lower.



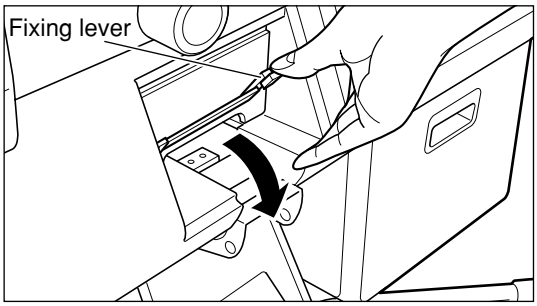
[5] Humidity Control

⚠WARNING

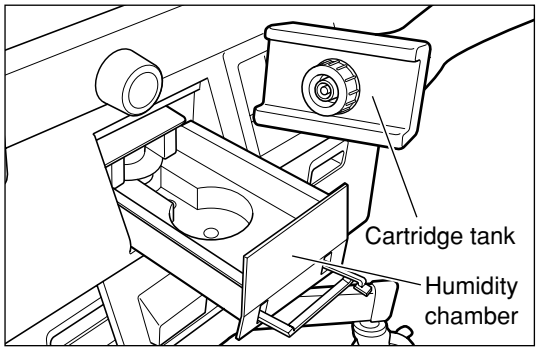
Humidity should be controlled after the incubator air temperature has stabilized. Be sure to follow the doctor's instructions in humidity control.

(1) Open the humidity chamber cover.

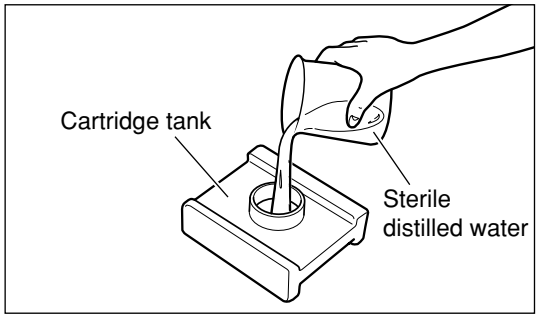
(2) Pull down the arm of the humidity chamber fixing lever toward you until it comes to the position labeled [FREE] on the main body.
Draw out the humidity chamber by the handle (protruding part) on the bottom until it stops halfway.



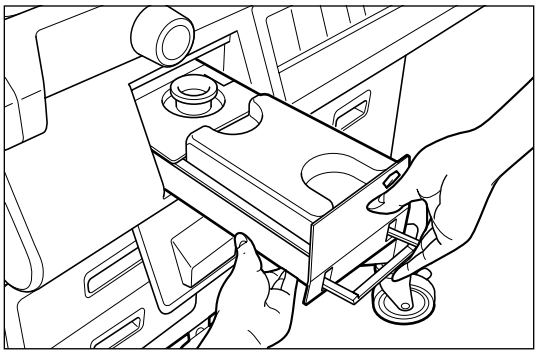
(3) Lift up the humidity chamber and draw it out further and then take out the cartridge tank.



(4) Open the lid of the cartridge tank, and fill up the tank with sterile distilled water. Close the lid securely. Replace the cartridge tank to its former position in the humidity chamber with the lid downward.



(5) Push in the humidity chamber gently to its former position in main body with the fixing lever pulled down toward you.
(6) Pull up the arm of the fixing lever securely until it comes to the position labeled [SET] on the main body. Close the humidity chamber cover.



⚠ CAUTION

Do not pour water directly in the humidity chamber. Be sure to fill the cartridge tank with sterile distilled water.

To take out the humidity chamber, pull the fixing lever toward you and draw the humidity chamber out of the main body until it stops. Then lifting up the humidity chamber, take it out. Be careful in handling the humidity chamber because it is heavy with water in it.

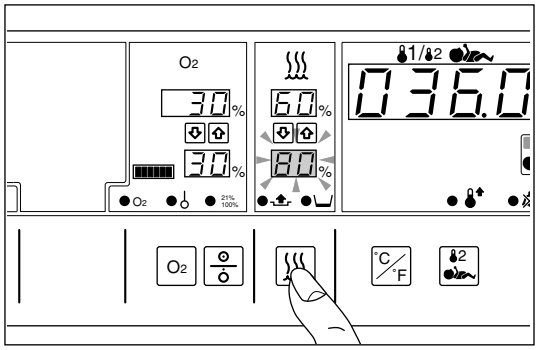
Even when no humidification is required, ensure that the humidity chamber is installed in the unit.

The humidity chamber should be emptied and refilled with fresh sterile distilled water every 24 hours to prevent the multiplication of micro-organisms and the contamination of the humidity chamber. Allow the humidity chamber and the water to cool down sufficiently before replacing the water in the humidity chamber. Otherwise you may get scalded.

The temperature of the sterile distilled water to pour in the cartridge tank should not exceed 40℃.

When power is turned off, the set relative humidity will be cleared. The procedure of setting a desired relative humidity needs to be repeated after power is turned on again.

(7) Press the relative humidity selector switch [≋] for about one second, and the set relative humidity display will begin to flash.
Press an appropriate setting switch ([△] or [▽]) to have a desired value in the range of 40-95% appear on the set relative humidity display. The relative humidity display will stop flashing and remain on when the setting procedure is completed. Then humidification will begin. The displayed relative humidity gradually approaches the set relative humidity.
If [▽] is pressed when the relative humidity is 40%, "OFF" will be displayed and the humidification heater will not work. If humidity chamber is not properly installed in the main body unit, the humidity chamber "OFF" indicator will become illuminated.
In this case, even when the humidification function is activated, the heater will not work.



(8) The water in the humidity chamber will evaporate and decrease in volume after long operation. If the low water level indicator on the control panel illuminates, draw out the humidity chamber until it stops and supply additional sterile distilled water to the maximum water level line.

⚠ WARNING

To supply additional water, draw out the humidity chamber toward you until it stops. Be very careful in handling the humidity chamber because the humidity chamber itself may have become very hot.

■Prevention of the multiplication of micro-organisms in the humidity chamber

The optional Silvita (with silver steam attached, intended for use in the humidity chamber), placed in the humidity chamber, helps inhibit the multiplication of micro-organisms. Clean the Silvita gently with a soft cloth dampened with a disinfectant solution, once a week, to remove the dirt on the surface.

■ Operation without humidity control

If the incubator is going to be used without humidity control, do not put any water in the humidity chamber. Though the low water level indicator " ⎵ " illuminates in this case, operate the incubator with the indicator " ⎵ " on.

[6] Oxygen Supply

⚠WARNING

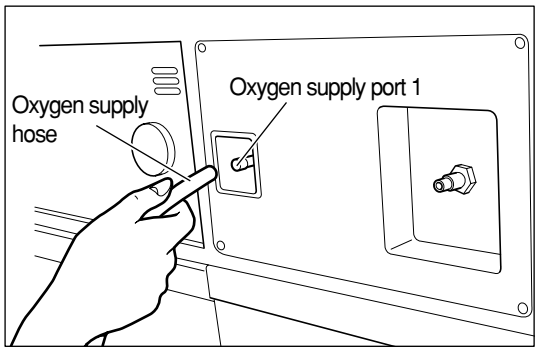
Be sure to follow the doctor's instructions in making decisions on oxygen supply. Pay utmost attention to the oxygen concentration in the incubator during oxygen supply.

Never supply humidified oxygen from the oxygen connecting port. Supplying humidified oxygen by means of a humidifier jar or other devices may damage the internal oxygen supply valve.

6-1. Using the Oxygen Flowmeter

(1) Be sure to connect the oxygen flowmeter between the oxygen supply source and the oxygen connecting port. Connect the oxygen supply hose to the oxygen connecting port 1. Turn the knob on the oxygen flowmeter and adjust the flow rate to a desired level.

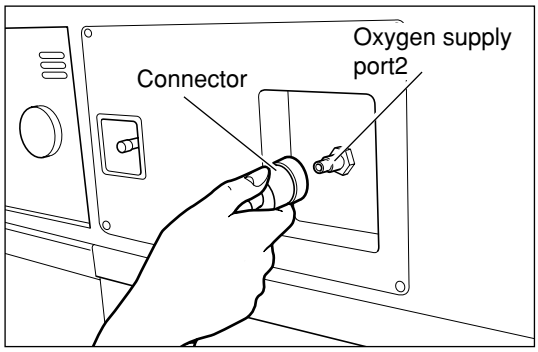
(2) The oxygen concentration in the incubator will stabilize in about 40 minutes. Increase the supply flow rate if the detected oxygen concentration in the incubator is lower than a desired level; decrease the supply flow rate if the detected oxygen concentration in the incubator is higher than a desired level. Pay utmost attention to the changes in the oxygen concentration in the incubator by monitoring it with an oxygen monitor until it stabilizes.



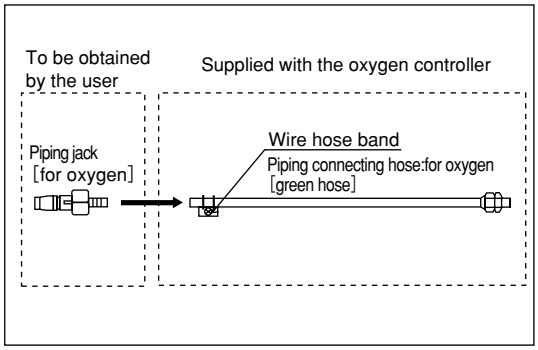
6-2. Using the Internal Oxygen Controller (B,C type)

The description in this section relates to a unit in which an oxygen controller is installed.
If your unit doesn't have one, please skip this section.

(1) Insert the connector of the piping connecting hose into the oxygen connecting port 2 and supply oxygen.



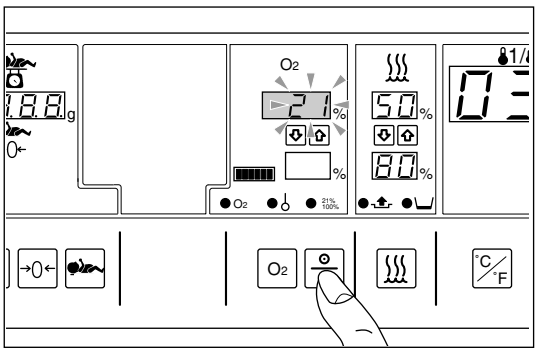
Piping jacks are not included in the accessories. To connect to a piping outlet, obtain an appropriate piping jack and attach it to the piping connecting hose supplied with the unit by referring to the figure on the right.



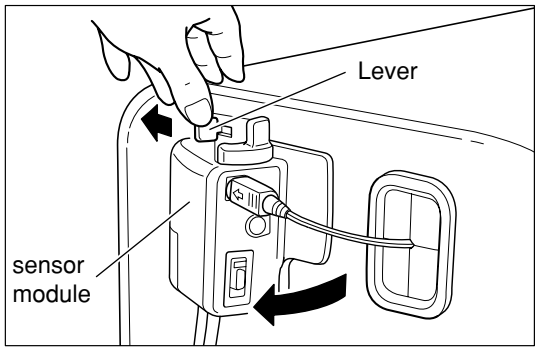
■ Connecting the oxygen cylinder

To connect the oxygen cylinder, use the optional high pressure oxygen hose (for V-505/pressure reducing regulator) and the optional OX-231 pressure reducing regulator (for oxygen).

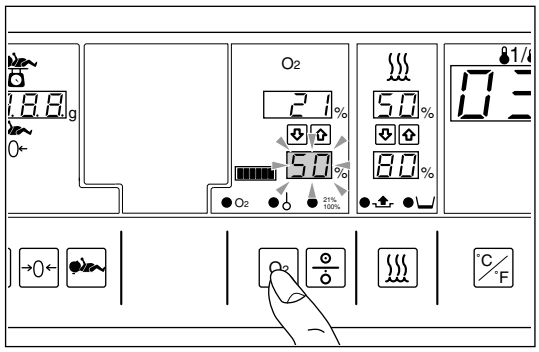
(2) Check that two oxygen sensors are attached to the sensor module on the left side of the hood. Press the ON/OFF switch for about one second, and the oxygen concentration display will illuminate.



(3) Push the lever on the sensor module, and pull the sensor module a little out of the hood. Then release the lever and allow it to turn until it stops by itself. A click will be heard, the calibration indicator will flash, and calibration will be started.
After a while a click will be heard again, the calibration indicator will go out and calibration will be completed.

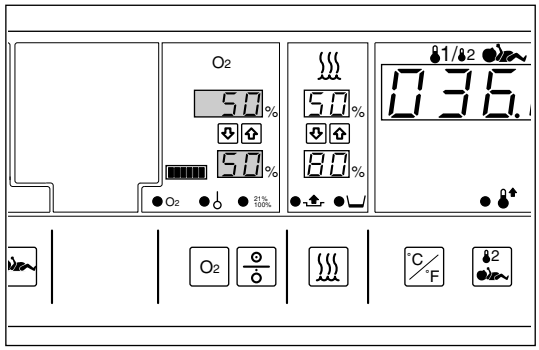


(4) Replace the sensor module to its former position in the hood and press the O_2 switch for one second.
The set oxygen concentration display will begin to flash. Press an appropriate setting switch (⇧ or ⇩) to set the oxygen concentration to a desired level.
Now oxygen begins to be supplied in the incubator.



(5) The oxygen concentration in the incubator displayed will be stabilized when the actual oxygen concentration becomes close to the set oxygen concentration. It usually takes about 40 minutes.

(6) To stop oxygen supply, press the ON/OFF switch.



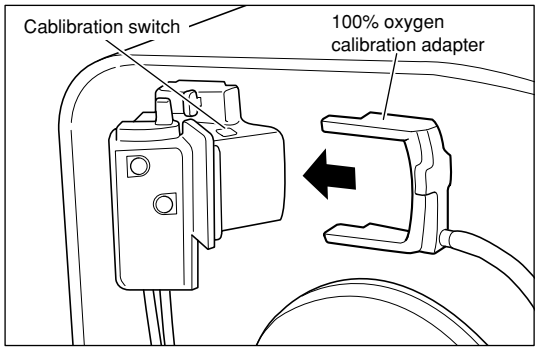
■ Calibration

To use the oxygen controller, be sure to perform the 21% calibration procedure described in (3) above. For more precise oxygen control, perform the 100% calibration procedure described below.

■ 100% calibration

To perform the 100% calibration procedure, obtain the accessory 100% oxygen calibration adapter, and connect it to the 100% oxygen supply source (either an outlet or an oxygen cylinder).

After the above (3), attach the 100% oxygen calibration adapter to the sensor module and let 100% oxygen flow at 2L/min without humidification. After the displayed oxygen concentration stabilizes at 100% or so, press the calibration switch on the top of the sensor module.



⚠WARNING

- Be sure to follow the doctor's instructions in making decisions on oxygen supply.
- Pay utmost attention to the oxygen concentration in the incubator during oxygen supply.
- Be sure to use oxygen intended for medical use.
- Never supply humidified oxygen to the oxygen supply port.
  Supplying humidified oxygen by means of humidifier jar or other devices may damage the oxygen supply port of the incubator.
- Pay utmost attention to the changes in the oxygen concentration in the incubator by monitoring it continuously with an oxygen monitor. If the oxygen concentration in the incubator deviates from a desired level, make the necessary adjustment by increasing or decreasing the oxygen flow rate.
- Improper use of supplementary oxygen may cause serious side effects including loss of sight, damage to the brain and death. The risks of side effects vary with infants.
  Follow the doctor's instructions in selecting a desired method of oxygen administration, a desired oxygen concentration and a desired duration of administration.
- A risk of a fire hazard increases when oxygen is used. Do not place such auxiliary equipment capable of generating sparks at the place where the incubator is installed.
- If oil, grease or a grease-like substance should get in contact with pressurized oxygen, a violent spontaneous ignition may occur. Do not let such substances stick to the oxygen pressure regulator, the oxygen cylinder valve, pipings, connections and other oxygen supply equipment.
- On a high pressure oxygen cylinder, use only a tested pressure reducing valve or pressure regulating valve indicated specifically for oxygen supply.
- A dirty filter, which will affect the oxygen concentration, should be replaced frequently with a new one.
- The oxygen flowmeter cannot be used to provide an accurate index of the oxygen concentration in the incubator. The oxygen concentration should be checked with a calibrated oxygen monitor or oxygen controller by following the dctor's instructions.

⚠WARNING

The oxygen concentration in the incubator varies with the dirtiness of the filter, the operating conditions of the incubator, the accuracy of the oxygen flowmeter, etc. To maintain the oxygen concentration in the incubator accurately at a desired level, measure it repeatedly with an accurate oxygen monitor.

Check the accuracy of the oxygen monitor periodically with the oxygen in the atmosphere (20.9%) and pure oxygen (100%).

Be sure to follow the doctor's instructions in deciding an optimum oxygen concentration on the basis of PaO_2 (a measured arterial oxygen partial pressure level). It is reported to be extremely important and essential, where a high oxygen environment is required, to measure the oxygen concentration in the incubator and to repeatedly analyze arterial gas levels, on which to determine a desired oxygen concentration.

In supplying high concentration oxygen, attach the cap (rubber plug) supplied with the incubator to the hole provided on the top surface of the hood for weighing the infant.

Cleaning or maintaining the incubator in an environment where the oxygen concentration is at a high level may lead to a fire or an explosion. Before cleaning or maintaining the unit, check that oxygen supply has been stopped and that the oxygen hose has been removed from it. Oxygen supply should be stopped or the oxygen hose should be removed from the unit when the unit is not in operation.

The oxygen cell is a sealed device containing a potassium hydroxide electrolytic solution. Throw the oxygen cell away as soon as it is found to be leaking. If the solution should touch your skin or clothes, wash it away with a lot of water. If it should get in your eye, wash the eye immediately for at least 15 minutes without closing it, and then contact the doctor.

Check routinely the oxygen cell for any sign of deterioration or leakage, and replace it if necessary.

The oxygen concentration should always be checked separately to make sure that oxygen is being supplied at a prescribed level.

If any abnormal condition or trouble should occur to the oxygen controller, indicate on the unit that it is out of order, and do not use the unit until it has been repaired completely by a service engineer so as to prevent possible danger.

If any abnormal condition or trouble should occur to the oxygen sensor or oxygen controller while administering oxygen, immediately set the oxygen controller to OFF, and use the oxygen flowmeter to maintain the required oxygen concentration in the incubator. Press the ON/OFF switch of the oxygen controller for about one second to set the oxygen controller to OFF, and then supply oxygen to the incubator by connecting the oxygen supply hose from the oxygen flowmeter to the oxygen supply port 1. In this case, continue to check the oxygen concentration with another oxygen monitor, etc., and pay utmost attention to oxygen concentration. However, this operation should only be used as a temporary measure. After use, indicate on the unit that it is out of order, and do not use the oxygen controller until it has been repaired completely by a service engineer.

The oxygen concentration inside the incubator hood may be affected when an access port or the front admittance panel is opened. Check that the access port packings and the tube introduction slit assemblies are securely attached. Any gap in the hood assembly may cause the oxygen concentration in the incubator to drop.

Oxygen administration may increase the noise level to the infant in the incubator.

[7] Weight Monitor (C type)

The description in this section relates to a unit in which a weight monitor is installed. If your unit doesn't have one, please skip this section.

Two weighing modes are available: the weight mode and the weight difference mode. Choose either mode before monitoring. Either weighing mode, once set, remains effective even after power off.

- Weight mode: The weight of the infant excluding that of the mattress platform, the mattress, the bed sheet, etc. is determined.
- Weight difference mode: A difference in the weight including that of the mattress platform, the mattress, the bed sheet, etc. is determined.

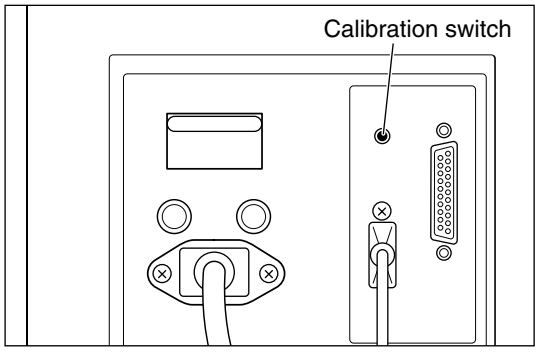
⚠ CAUTION

- Be sure to place the infant on the center of the mattress to weigh. Otherwise, it may not be weighed accurately.
  The mattress platform should be in a horizontal position.
- This weight monitor doesn't require official approval.
- In the weight difference mode, always check tare. Otherwise, a difference in body weight cannot be determined accurately.
- Avoid applying excessive force to the infusion tube, or the tubes and cables of the heart rate monitor, the respiration monitor, etc. to ensure accurate determination of weight.
- The weight monitor is factory-calibrated before delivery. However, errors may occur depending on where it is installed.
- To ensure correct measurements, calibrate the weight monitor periodically.

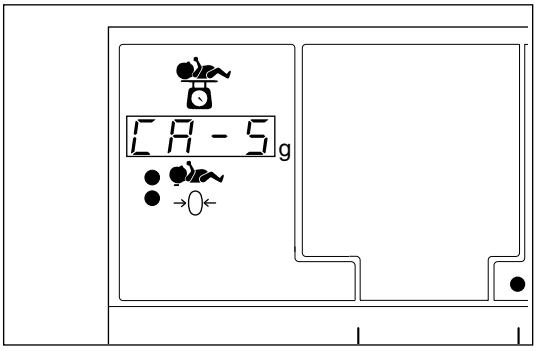
7-1. Calibrating the Weight Monitor

Obtain a 5kg reference weight for calibration.

（1）Pull down the power switch to turn power off.
（2）Pull up the power switch to turn power on while pushing the calibration switch on the right side of the unit with something sharp-pointed.

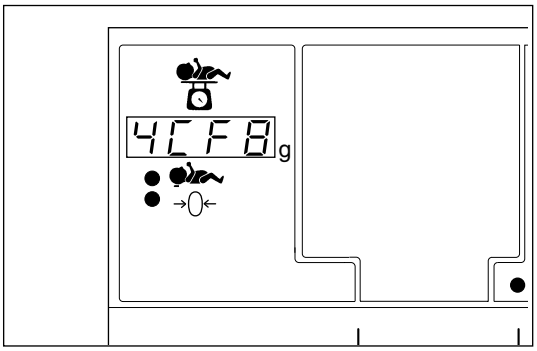


(3) "CA-5" appears on the weight display. The weight monitor is now in the 5kg calibration mode.



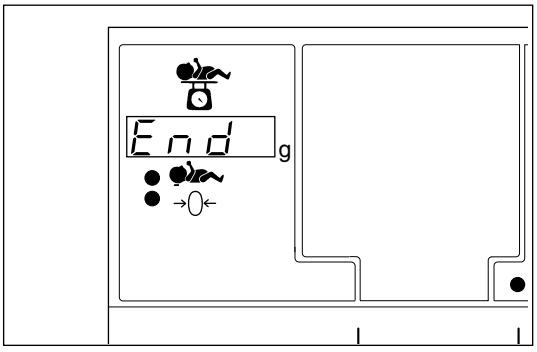
(4) 0kg calibration
Press the WEIGHT switch with nothing lying on the mattress platform. The STABLIZED indicator should come on.

(5) Check that a four-digit sexadecimal value appears on the weight display.
* "E-10" will appear on the weight display if calibration cannot be carried out correctly. Make sure that nothing is lying on the mattress platform and that you are not touching the hood or the like. Then press the STORE switch to perform the 0kg calibration procedure again.



(6) 5kg calibration
Press the WEIGHT switch with the 5kg reference weight on the central part of the mattress platform. The TARE SUBTRACTED indicator should come on.
* "E-11" and "E-12" will appear on the weight display if calibration cannot be carried out correctly. Make sure that the reference weight is of 5kg and that you are not touching the hood or the like. Then press the STORE switch to perform the 5kg calibration procedure again.

(7) The calibrated value appears on the weight display. Press the WEIGHT switch again, and "End" will appear on the weight display, indicating the completion of calibration.



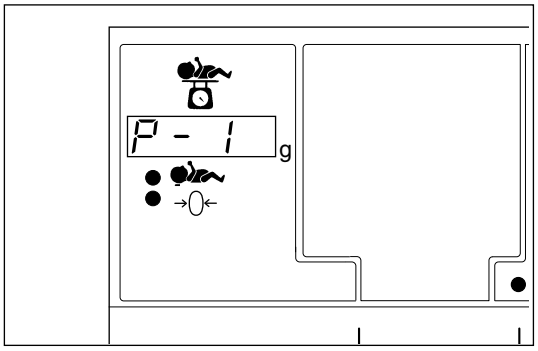
(8) Either "P-1" (in the weight mode) or "P-2" (in the weight difference mode) appears on the weight display. The weight monitor is now ready for use.

7-2. Setting the Weighing Mode

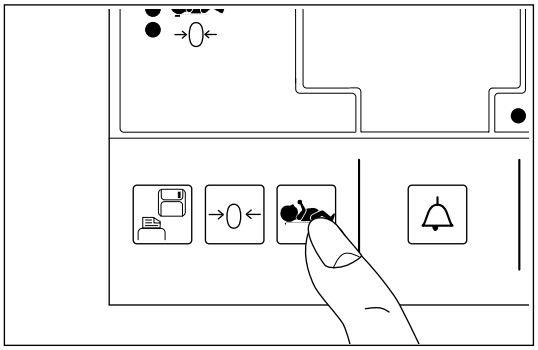
(1) Pull down the power switch of the incubator to turn power off.

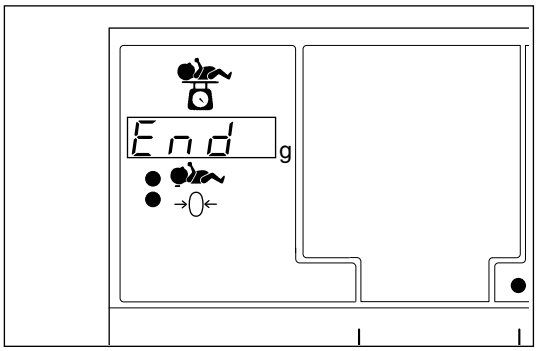
(2) Pull up the power switch to turn power on while pressing the ZERO switch.

(3) Either "P-1" (in the weight mode) or "P-2" (in the weight difference mode) appears on the weight display. If the ZERO switch is pressed again, "P-1" will be replaced by "P-2", and vice versa.

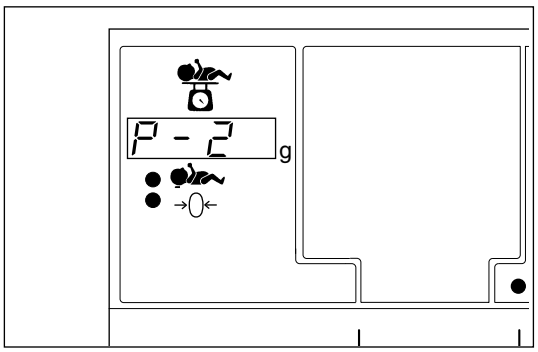


(4) Select and set a weighing mode to use, and then press the WEIGHT switch. "End" appears on the display, indicating the completion of setting.





(5) Either "P-1" or "P-2" appears on the weight display, indicating the currently selected weighing mode. The weight monitor is now ready for use.
If "P-1" is on the weight display, the weight monitor is in the weight mode; if "P-2" is on the weight display, the weight monitor is in the weight difference mode.



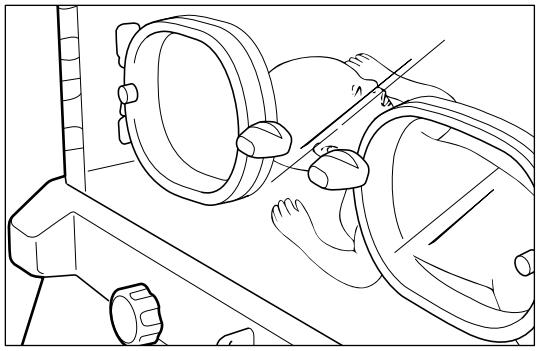
7-3. Weighing Procedure

7-3-1. Weight mode (P-1)

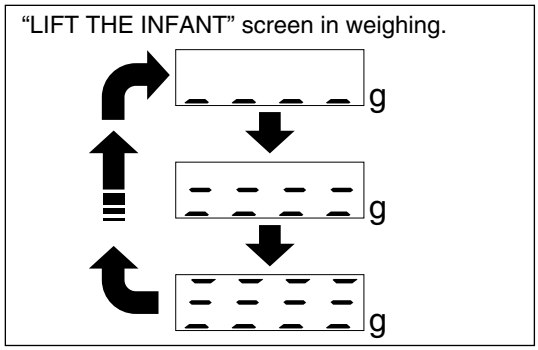
Only the infant, excluding the mattress, the bed sheet, etc. is weighed.

● Make sure that the infant's clothes, the bed sheet, etc. are within the boundary of the mattress platform.

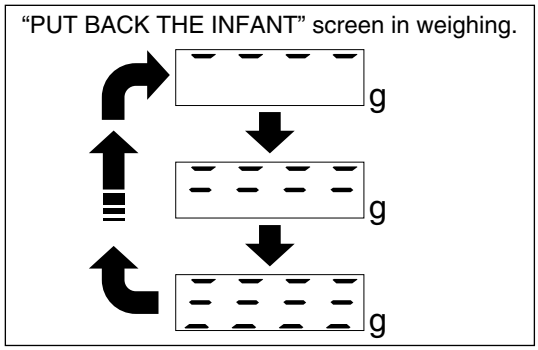
(1) Press the ZERO switch with the infant lying on the mattress platform.



(2) Lift the infant off the mattress platform when the 「－－－－－」on the weight display illuminates in ascending order, accompanied by a melody.
"LIFT THE INFANT" screen in weighing

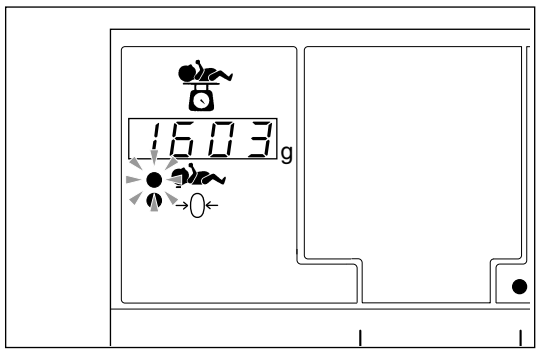


(3) Put back the infant on the mattress platform when the 「－－－－－」on the weight display illuminates in descending order, accompanied by a melody.



(4) Read the displayed value when the STABLIZED indicator comes on.

* "U-20" will appear on the weight display if tare is determined unstably. Put back the infant on the mattress platform, press the ZERO switch again, and weigh the infant once more.
* "U-21" will appear on the weight display if the infant's weight is determined unstably. Press the WEIGHT switch and weigh the infant once more.



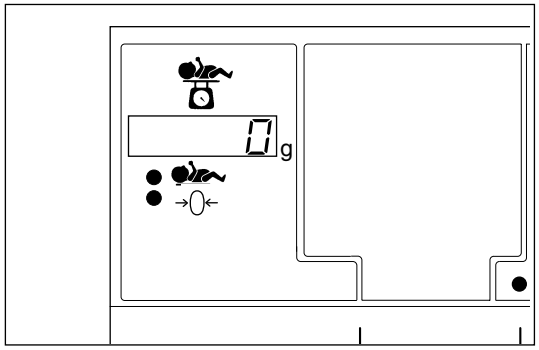
(5) For accurate weighing, press the WEIGHT switch with the infant lying on the mattress platform and weigh the infant once more.

7-3-2. Weight difference mode (P-2)

The amount of change in the infant's weight including that of the mattress, the bed sheet, etc. is determined.

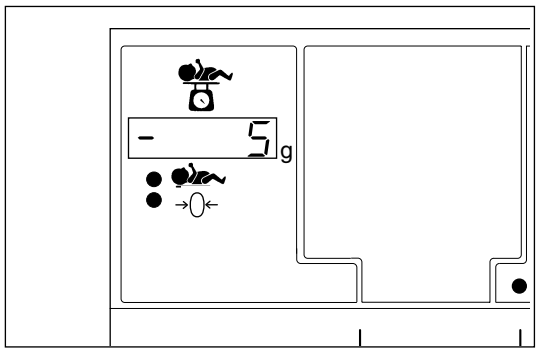
(1) Press the ZERO switch to have the reference weight stored in the memory. "0" appears on the weight display.

* "U-20" will appear on the weight display if the reference weight is determined unstably. Press the ZERO switch and have the reference weight stored in the memory once more.



(2) After a while, press the WEIGHT switch to have the amount of change in the infant's weight determined and displayed. If the infant's weight has decreased, the minus mark will also appear. Every time the WEIGHT switch is pressed, a difference between the actual weight at that point of time and the reference weight will be displayed.

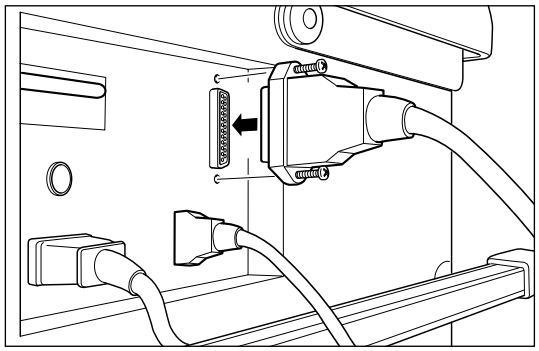
* "U-21" will appear on the weight display if the amount of change in the infant's weight is determined unstably. Press the WEIGHT switch and weigh the infant once more.



7-4. Recording the Weight

An optional printer can be connected to the weight monitor. When the printer is connected, you can select one of the two recording methods: to have a weight value printed on the recording paper by pressing the STORE switch every time you weigh the infant, or to have all the weight values in the memory printed on the time series.

To use the printer, connect the printer cable to the weight output connector on the right side of the unit, and set the power switch of the printer to ON position.

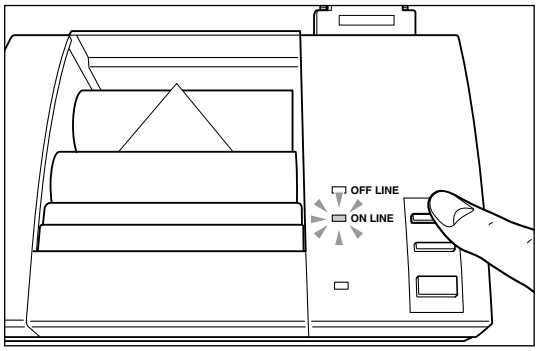


7-4-1. To record and store a weight value in the memory on weighing the infant

(1) Press the ON LINE/OFF LINE switch of the printer, and the ON LINE indicator will come on.

(2) After weighing the infant, press the STORE switch of the unit. The obtained weight value will be printed together with the time and date of weighing and stored in the memory.

＊ Press the STORE switch within three minutes of weighing the infant to have the obtained weight value stored in the memory.



7-4-2. To record all the weight values stored in the memory

To print all the weight values stored in the memory on the time series, press the ON LINE/OFF LINE switch of the printer to select "OFF LINE" first. Then press the ON LINE/OFF LINE switch again to turn the ON LINE indicator on. The weight values stored in the memory will be printed on the time series together with the time and date when they were obtained.

Up to thirty most recent weight values can be printed.

An example of printout :

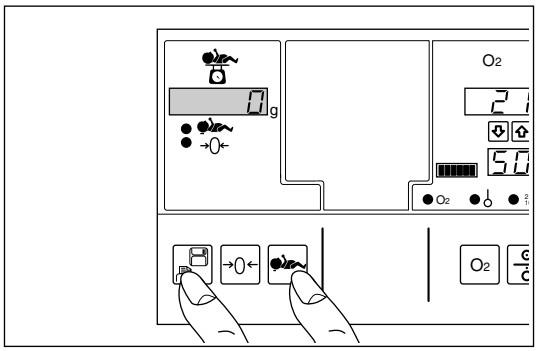
	2209g	2002/10/02	09：58
01	2252g	2002/10/09	09：55
02	2248g	2002/10/08	09：40
03	2230g	2002/10/06	10：08
04	2225g	2002/10/05	09：53
05	2221g	2002/10/03	09：45
06	2209g	2002/10/02	09：58

7-4-3. To erase all the weight data in the memory

(1) Pull down the power switch of the incubator to turn power off.

(2) Pull up the power switch of the incubator to turn power on.
Either "P-1" or "P-2" appears on the weight display. With "P-1" or "P-2" shown on the weight display, press the STORE switch and the WEIGHT switch simultaneously for a few seconds.

(3) A buzzer will sound briefly, indicating that all the weight data is erased.



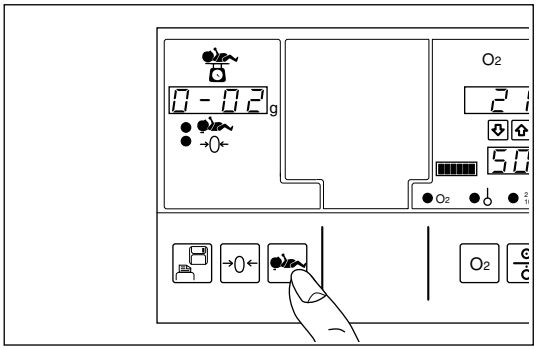
7-5. Correcting the Time

A clock is incorporated in the unit to record the time and date of weighing. If the clock should go wrong, follow the procedure below to correct the time.

(1) Pull down the power switch of the incubator to turn power off.

(2) Pull up the power switch to turn power on while pressing the WEIGHT switch.

(3) "0-XX" appears on the weight display. The number 0 on the left indicates the setting of the year. Set the last two digits of the year with the ZERO switch (+) or the STORE switch (-). Press the WEIGHT switch to enter the year.



(4) "1-XX" appears on the weight display. The number 1 on the left indicates the setting of the month. Set the month with the ZERO switch (+) or the STORE switch (-). Press the WEIGHT switch to enter the month.

(5) "2-XX" appears on the weight display. The number 2 on the left indicates the setting of the day. Set the day with the ZERO switch (+) or the STORE switch (-). Press the WEIGHT switch to enter the day.

(6) "3-XX" appears on the weight display. The number 3 on the left indicates the setting of the hour. Set the hour with the ZERO switch (+) or the STORE switch (-). Press the WEIGHT switch to enter the hour.

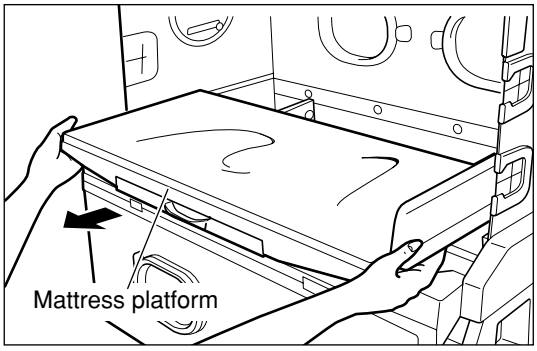
(7) "4-XX" appears on the weight display. The number 4 on the left indicates the setting of the minute. Set the minute with the ZERO switch (+) or the STORE switch (-). Press the WEIGHT switch to enter the minute.

(8) "End" appears on the weight display, indicating the completion of the procedure.
When the time-setting procedure is completed, either "P-1" or "P-2" appears on the weight display, indicating the currently selected weighing mode. The weight monitor is now ready for use.

[8] Other Operation procedures

8-1. Drawing out the Mattress Platform

Open the front admittance panel and draw out the mattress platform toward you. The stopper will function, and the mattress platform will be locked in place before completely coming out.

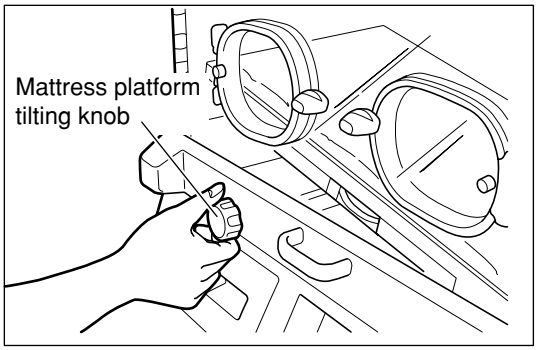


⚠WARNING

Before drawing out the mattress platform, check that the mattress platform stopper is in engagement with the rail. Otherwise, the mattress platform will come off and cause a hazard.

8-2. Tilting the Mattress Platform

The mattress platform may be tilted or raised by operating the two mattress platform tilting knobs on the outside of the unit. The tilting knobs should be operated gently.



⚠DANGER

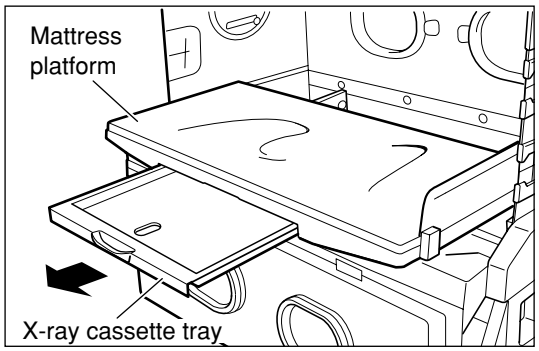
The snap-open access port should be closed securely before tilting or raising the mattress platform. Otherwise the infant may fall through an open access port because there will be little difference in level between the mattress and the snap-open access port when the mattress platform is tilted or raised.

⚠WARNING

Do not apply flammable oil to the mattress platform tilting mechanism. Do not lubricate the screws on the connecting section. Accumulated oil may cause a fire hazard.

8-3. X-ray Cassette Tray

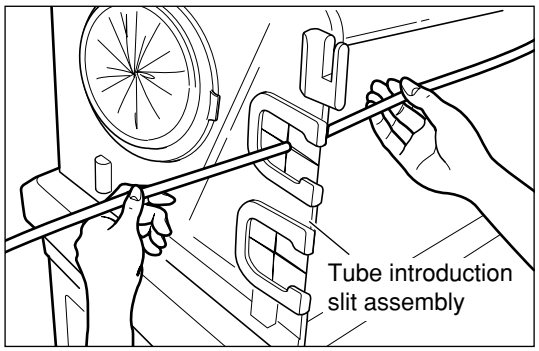
Open the front admittance panel and draw out the X-ray cassette tray from under the mattress platform. Place a cassette loaded with an X-ray film and replace the X-ray cassette tray to its former position. X-ray photographs can be taken with the infant in the incubator.



8-4. Taking Out Cords and Tubes

A number of cords and tubes may be connected to the infant in the incubator. They should be passed through the tube introduction slit assembly out of the incubator so that they may not get in the way of procedures.

(1) Take out the cords and tubes through the tube introduction slit assembly on both sides of the hood.
(2) They can be taken out from the side of the tube introduction slit assembly component.



8-5. I/O Connector

The I/O connector is used to connect an external computer to the incubator to have the operation of the unit recorded and displayed.

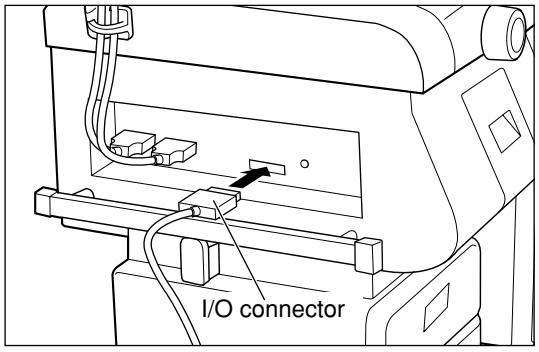
⚠WARNING

To prevent a risk of electric shock, the device to be connected to the unit should be equal in safety to an electric device for medical use meeting the requirements of IEC601-1. Connect the device to a common protective grounding system.

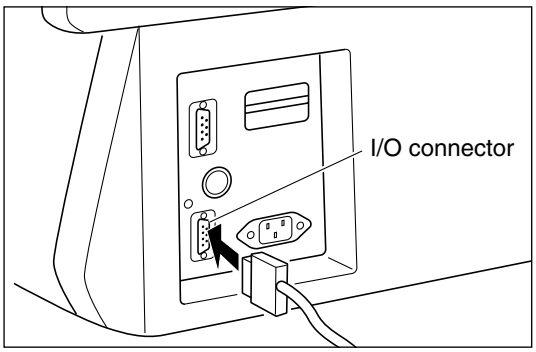
The I/O port (communication connector) is intended to inform the external computer of the conditions of the unit. The external computer cannot be used to control the unit.

Do not fail to follow the instructions described in"The External Communication Specifications".

■ B.C type



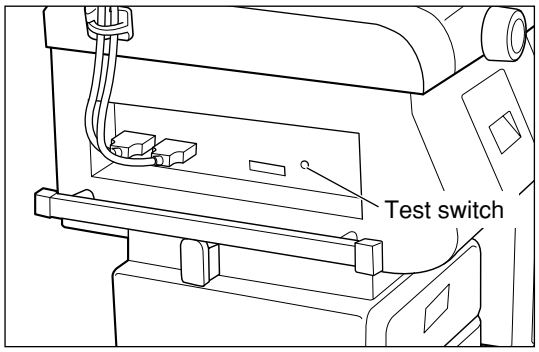
■ A type



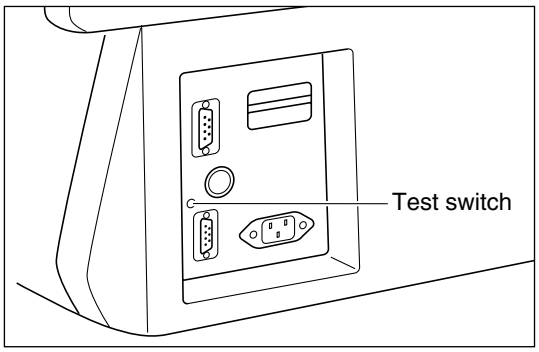
8-6. Test Switch

Press the test switch, and all LEDs will turn on and the audible alarm will sound.
Thus you can check if the alarms operate normally or not.

■ B.C type



■ A type



[9] Cleaning, Disinfection and Maintenance

⚠ CAUTION

- Be sure to turn the power off, remove the power plug and allow the incubator and the heater to cool down sufficiently before cleaning or disinfecting the unit.
- This product is shipped without being disinfected. Be sure to clean and disinfect the unit before using it for the first time after purchase.
- Before cleaning or disinfecting the unit, check that oxygen supply to the incubator has been stopped and that the incubator has been disconnected from the oxygen supply source. Cleaning or maintaining the incubator in an environment where the oxygen concentration is at a high level may lead to a fire or an explosion.
- Clean and disinfect the unit whenever you use it to a new infant.
- Clean and disinfect the unit whenever you notice dirt or stain which might cause infection.
- After cleaning and disinfection, assemble the removed parts correctly, and check if the unit operates normally.

Obtain a soft clean cloth and a disinfectant solution needed for cleaning and disinfection.

■ Recommended disinfectant solutions include:

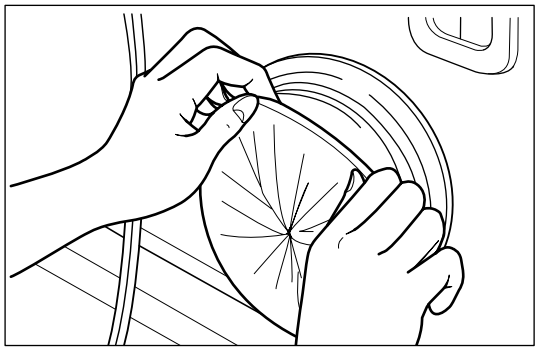
- 0.2-0.5% benzalkonium chloride aqueous solution (e.g. Osvan)
- 0.2-0.5% benzethonium chloride aqueous solution (e.g. Hyamine)
- 0.1-0.5% chlorhexidine aqueous solution (e.g. Hibitane)

Never use the above agents undiluted. Do not use any abrasive cloth, cleaner, alcohol, acetone or other solvent for cleaning and disinfection. Do not autoclave.

9-1. Hood

● **Access port cover**

Remove all the access port covers. Immerse and clean them in a disinfectant solution.



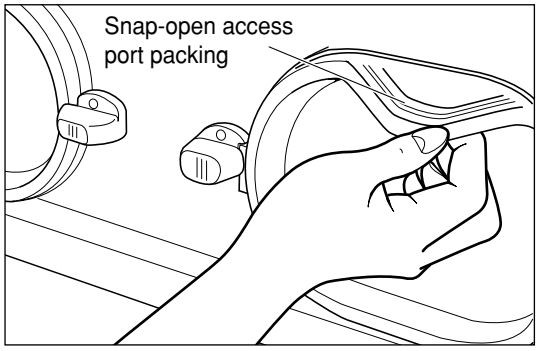
⚠ CAUTION

- Spare access port covers should always be on hand. A dirty cover should be replaced immediately with a new one.

● **Snap-open access port packing**

Remove the rubber packing from the snap-open access port.

Immerse and clean it in a disinfectant solution.

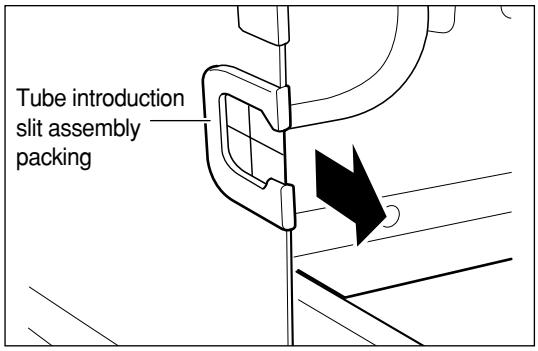


● **Front admittance panel packing**

Remove the rubber packing from the front admittance panel. Immerse and clean it in a disinfectant solution.

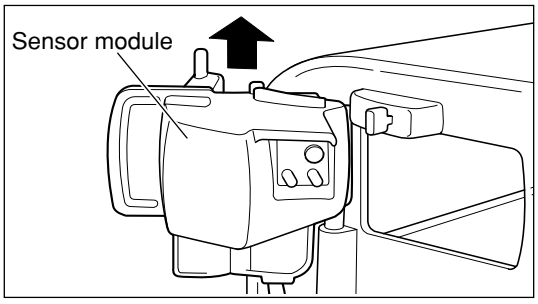
● **Tube introduction slit assembly**

Remove the packing from the tube introduction slit assembly. Immerse and clean it in a disinfectant solution.



● **Sensor module**

Remove all the cables connected to the sensor module. Remove also the connector to the relay box. Pull the sensor module out of the hood and lift it up. As for the A-type unit, sensor module is unable to remove from the unit. Wring tightly a soft cloth dampened with a disinfectant solution and clean the sensor module.

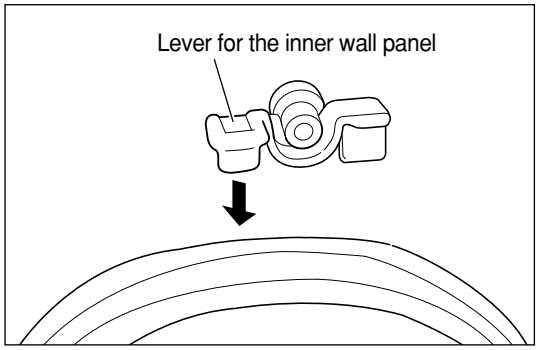


⚠ CAUTION

Do not immerse the sensor module in water. Immersing it in water will cause trouble.

● **Inner wall panel**

Open the front admittance panel. Push down the lever for the inner wall panel and open the inner wall panel. Wring tightly a soft cloth dampened with a disinfectant solution and clean the inner wall panel.



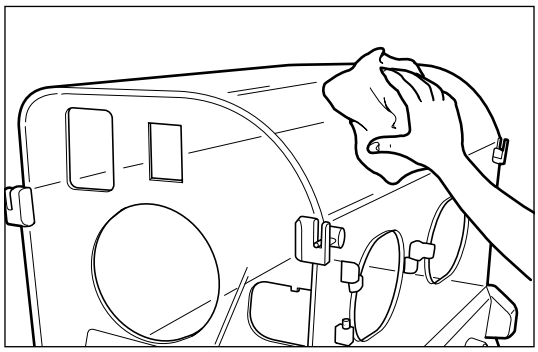
⚠ CAUTION

Do not remove the inner wall panel.

● **Hood**

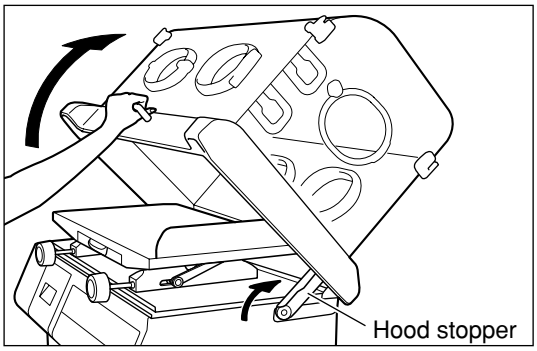
After all the parts are removed from the hood, wipe clean the inside and the outside of the hood with a soft cloth dampened with a disinfectant solution.

■ Replace the all removed components to their former positions. Check that they are attached correctly.



9-2. Mattress Platform and Parts Beneath

Hold the grip on the front of the hood and raise the hood. The hood stopper on the right side of the hood will be folded fully backward, and the hood will be locked in place.



⚠WARNING

Clean and disinfect the heater and its surroundings only when the heater has cooled down sufficiently, or you may get burned.

To raise the hood, be sure to hold the grip. If you hold the hood by any other part, the hood will slip and cause a hazard.

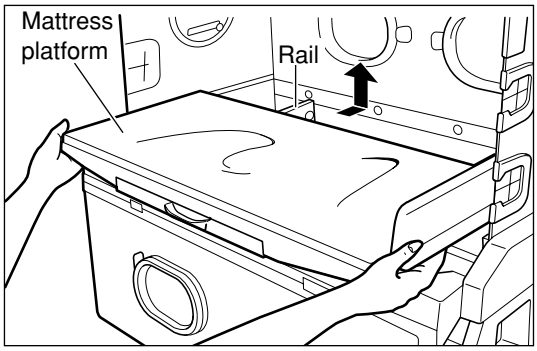
Be sure to check that the hood stopper has been folded fully backward. If it has been folded only insufficiently, the hood will fall forward and cause a hazard.

To raise or lower the hood, be sure to lower the mattress platform first. If the hood is raised or lowered with the mattress platform tilted or raised, it will hit the mattress platform and be damaged.

● **Mattress platform**

Hold the mattress platform by both edges and push it fully backward.

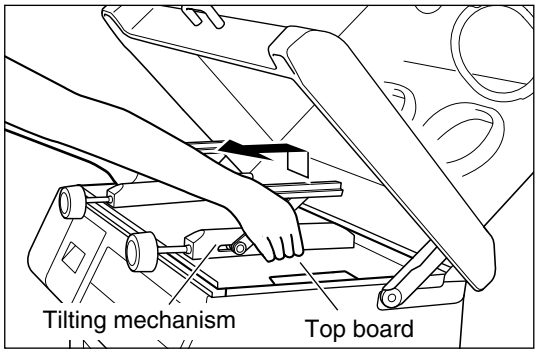
When it is removed from the rails, lift it up and take it out. Wipe it clean with a soft cloth dampened with a disinfectant solution. To replace it to its former position, place it fully backward and then pull it fully forward to make sure that it is in engagement with the rails.



● **Top board and top board packing**

Hold the top board by the tilting mechanism, lift up the top board and take it out.

Remove the top board packing from the top board. Wipe it clean with a soft cloth dampened with a disinfectant solution. Mind the top side and the bottom side of the top board packing. Be careful not to put it back upside down.

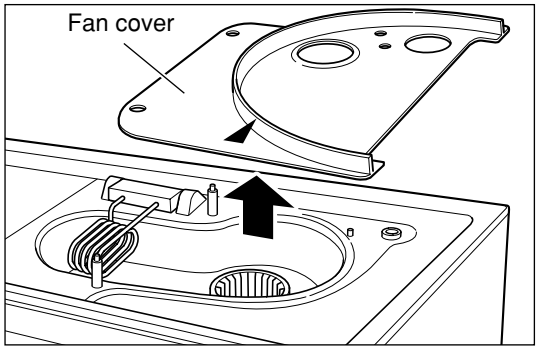


⚠ CAUTION

The tilting mechanism is detachable. However, do not disinfect it by immersing it in a medical fluid. The metal parts will be rusted and eroded, leading to malfunction.

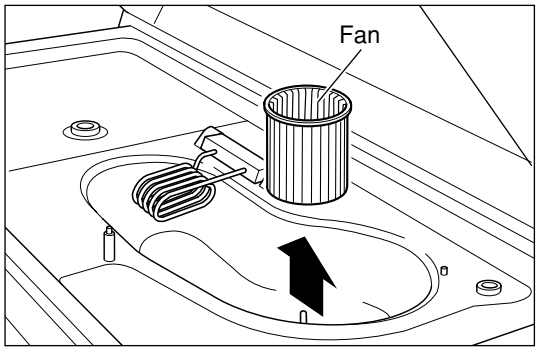
● **Fan cover**

Remove the fan cover and the air in take cover. Immerse and clean them in a disinfectant solution.



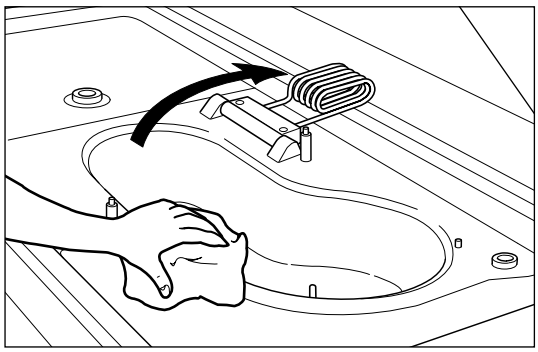
● **Fan**

Pull up and remove the fan. Immerse and clean it in a disinfectant solution.



● **Conditioning chamber**

The conditioning chamber will come in sight when all the components mentioned above are removed. Push the heater away from you and wipe the inside of the conditioning chamber thoroughly with a soft cloth dampened with a disinfectant solution.



■ Replace all the removed components to their former positions in reverse order. Check that they are attached correctly and close the hood.

9-3. Others

● **Skin temperature probe**

Wipe a used probe lightly with a soft dry cloth. Wipe the thermistor with a soft cloth dampened with a disinfectant solution to disinfect.

Be sure to keep the skin temperature probe in its case.

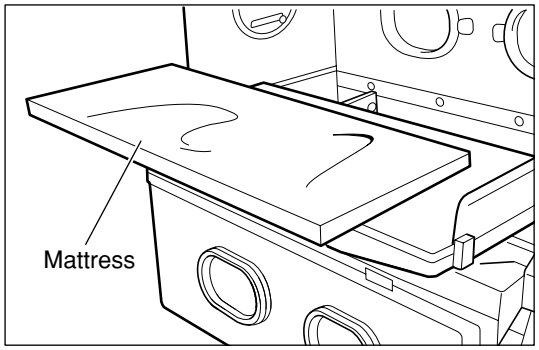
⚠CAUTION

Never wipe the skin temperature probe with alcohol, or the material will harden.

● **Mattress**

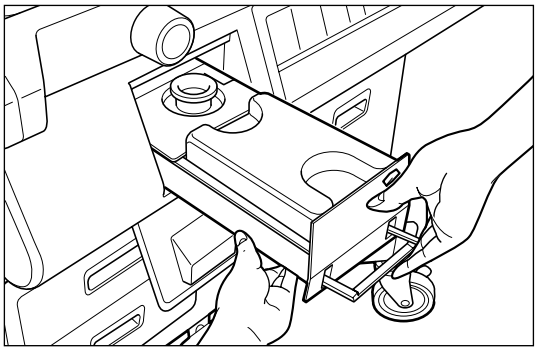
Remove the mattress before placing a new infant in the incubator. Disinfect it by immersing the entire mattress in a disinfectant solution.

Since the mattress consists of a special sponge completely sealed up in a vinyl cover, the sponge inside cannot be contaminated unless the cover gets damaged or perforated.



9-4. Humidity Chamber

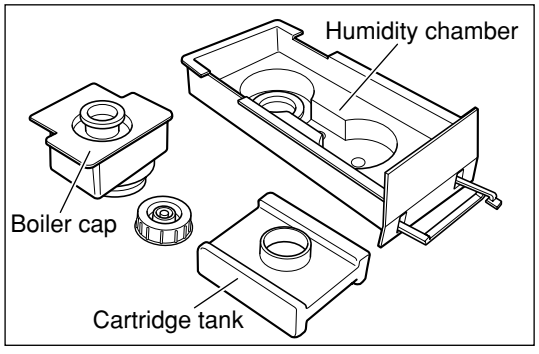
(1) Open the humidity chamber cover and pull down the fixing lever toward you. Draw out the humidity chamber until it stops halfway. Take out the humidity chamber while lifting it up.



⚠WARNING

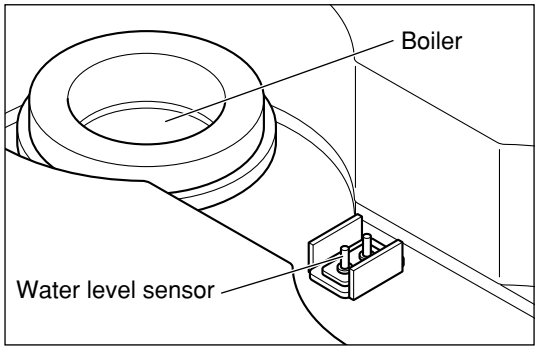
Take out the humidity chamber only when the humidity chamber and the water in it have cooled down sufficiently, or you may get scalded. Hold the humidity chamber with both hands, because it is heavy.

(2) Remove the cartridge tank, the lid of the cartridge tank and the boiler cap from the humidity chamber. Immerse and clean them in a disinfectant solution. Never immerse the humidity chamber in a disinfectant solution.

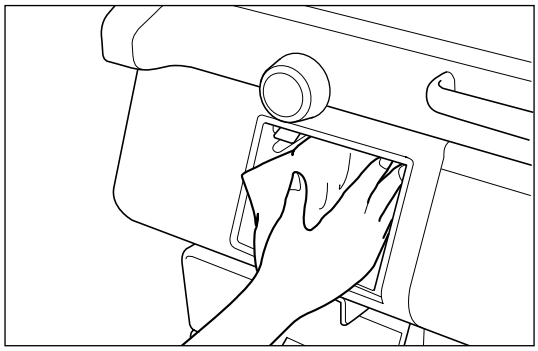


⚠WARNING

The humidity chamber contains electric parts. Never immerse the humidity chamber in a detergent solution. Do not rub the water level sensor and boiler's surface of the humidity chamber with a metal brush or any other hard material. The water level sensor may be damaged.



(3) Wipe clean the inside of the humidity chamber and the humidity chamber receptacle with a soft cloth dampened with a disinfectant solution.



(4) Replace the removed components to their former positions.

⚠CAUTION

Be sure to attach the boiler cap and the cartridge tank without fail.

[10] Maintenance Inspection

To use the unit safety for a longer period, perform maintenance inspection as instruction below.

● **Parts requiring periodical replacement**
Some parts need to be replaced periodically.

● **Inspection before use**
Check the operation of each part every time you are going to use the unit.

● **Three-month inspection**
Check the operation of each function every three-month in general.

● **Periodical inspection**
Contact your Atom distributor for periodical inspection on an annual basis in general.

⚠WARNING

If any defect should be detected in an inspection, indicate on the unit that it is out of order, stop using it immediately, and contact your Atom distributor.

10-1. Inspection before use

Check the following points every time you are going to use the unit.
If any defect should be detected, contact your Atom distributor.

Item to check	Description
Appearance	Both the main body and the hood should be free of breakage.
Interlocking hook	The main body should be fixed securely to the cabinet or the HL stand with the interlocking hooks.
Access port cover	Each access port cover should be attached securely to its corresponding access port packing. It should be free of breakage. The rubber portion should be elastic and tight.
Access port packing	Each packing should be attached correctly to the hood. It should be free of breakage.
Tube introduction slit assembly packing	Each packing should be attached correctly to the hood. It should be free of breakage.
Sensor module	It should be free of breakage or deformation. One connector should be in secure connection.
Front admittance panel operating knob	It should not be loose, should open and close reliably the front admittance panel.
Hook slider of snap-open access port	It should not be loose, should open and close reliably the snapopen access port. (If the access port is not locked reliably, the infant may fall.)
Tilting mechanism	It should operate smoothly. (Otherwise, it may not function.)
Power switch	It should turn the power on/off reliably.

Item to check	Description
Test switch	When it is pressed, all LEDs should turn on and the audible alarm should sound.
Filter	Should be clean. (Otherwise, air circulation may not be controlled properly.)
Rim seal for main deck	Top board should be positioned properly and free of breakage. (Otherwise, adequate positive pressure in the hood may not be maintained.)
Caution/Warning Label	Should not be loose or off. (To convey the message without fail.)
Operator's manual	Should be kept readily available. (To prevent improper operation of the unit due to the appropriate operating procedure not being followed exactly.)

10-2. Three-month Inspection

Check the following points every three months in general. If any defect should be detected, indicate on the unit that it is out of order, and contact your Atom distributor immediately.

Item to check	Procedure	Description
Incubator air temperature control	Set the temperature to 36.0℃ in manual control.	Displayed temperature should be stable at 36.0 ± 1℃.
Skin temperature control	Place the skin temperature probe at about 10cm above the center of the mattress surface in the incubator and set the temperature to 36.0℃ in servo control.	Displayed temperature should be stable at 36.5 ± 0.5℃.
Humidity control	Set RH to 90% with the incubator air temperature set to 32.0℃.	Displayed RH should be stable at 90 ± 5%.
Oxygen concentration Oxygen control	① Supply oxygen at 10L/min from the oxygen connecting port 1. ② Connect oxygen to the oxygen connecting port 2 and, after 21% calibration, set the oxygen concentration to 40%.	① Oxygen concentration in the incubator should be 65% or higher. ② 21% calibration should be able to performed accurately, and the displayed oxygen concentration should be stable at 40 ± 2%.
Fan	Check the exterior appearance by visual inspection.	It should be free of breakage and deformation.
Humidifier	1. Install the cartridge tank without any water in it. 2. Open the humidity chamber cover. 3. Draw out the humidity chamber by about 3cm. 4. Install the humidity chamber with the boiler cap off.	1. Check that the low water level alarm indicator comes on. 2. Check that the humidity chamber off alarm indicator comes on. 3. Check that the humidity chamber off indicator comes on. 4. Check that the humidity chamber off indicator comes on.

Item to check	Procedure	Description
Power failure alarm	Turn power on, and then remove the power plug from the power outlet.	Both the audible and visible alarms should activate.
Weight monitor	Place a 5kg weight (option) and check the display.	The display value should be in the range of 5000 ± 5g.

10-3. Periodical Replacement Parts

Periodical replacement parts are those which gradually deteriorate and worn down with use. They need periodical replacement to keep the accuracy and performance of the unit at a proper level.
Timing of replacement varies with the frequency and conditions of use. Consult your Atom distributor for replacement.

Part name	Period of use	Reason for replacement
Access port cover	3-6 months	Decreased airtightness due to breakage or deformation
Tube introduction slit assembly packing	1-2 years	Decreased airtightness due to breakage or deformation
Mattress	1-2 years	Decreased elasticity due to breakage or deformation
Snap-open access port packing	1-2 years	Decreased airtightness due to breakage or deformation
Top board packing	1-2 years	Decreased airtightness due to breakage or deformation
Filter	Less than 3 months	Dirtiness due to dust, decreased air circulation control due to clogging
Circulating fan motor	3 years	Decreased air circulation
Fan	3 years	Decreased air circulation
Hook slider	2 years	Defective locking
Humidity chamber	3 years	Defective humidification due to breakage or deformation
Oxygen sensor	Variable depending on operating conditions※	Defective calibration or defective oxygen control due to sensor life
Rechargeable battery (for power failure alarm)	4 years	Defective power failure alarm functionality due to battery life
Battery for weight monitor	2 years	Defective time keeping due to battery life

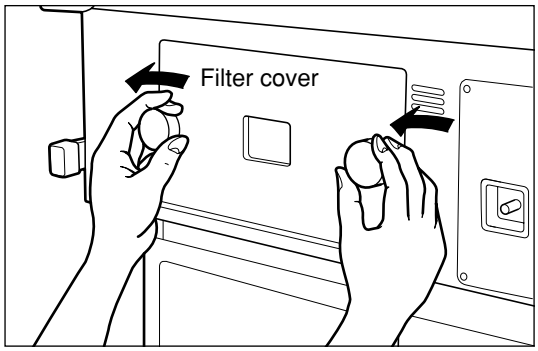
※ The oxygen sensor is an expendable, whose life is greatly affected by the ambient conditions under which it is used (i.e. ambient temperature, oxygen concentration). The life of the oxygen sensor used with this unit is expected to be about 24 months when used at the ambient temperature of 25℃ and in the atmosphere containing 21% O_2. However, its life will be reduced by half if the oxygen concentration or the ambient temperature should be doubled. Therefore, when attached inside the incubator, the oxygen sensor is exposed to the incubator air temperature of 36℃ and the oxygen concentration of 40%, so that its life will be reduced to 2/5 of its expected life. Considering the fact that the oxygen sensor is exposed to the oxygen in the ambient air even when the incubator is not in operation, its actual life will be about 1 year.

10-4. Replacing the Filter

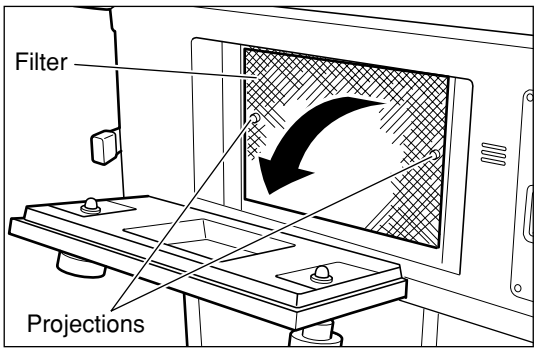
⚠ CAUTION

Replace the old filter with a new one every three months in general. The dirtiness of the filter varies with the degree of air pollution and the frequency of operation.
Check the dirtiness of the filter through the window of the filter cover. If the filter should be found discolored, replace it with a new one even if the three-month interval is not over yet.

(1) Loosen the right and left screws on the filter cover and open the cover.



(2) Remove the dirty filter, taking care not to let the dirt fly about.
(3) Discard the dirty filter. Wring tightly a soft cloth dampened with a disinfectant solution, and wipeclean the filter cover and the section to which the filter is attached.
(4) Mate the holes on both ends of the new filter with the projections to place the filter properly. Replace the cover to its former position and tighten the screws.
Write down the date of replacement on the accompanying filter replacement record card and affix it to the incubator for reference.



⚠ WARNING

Do not attempt to reuse the dirty filter by washing it or inserting it inside out.

Open the filter cover only to replace the old filter with a new one.

10-5. Replacing the Oxygen Sensor (Unit with oxygen controller)

The description in this section relates to a unit in which an oxygen controller is installed. If your unit doesn't have one, skip this section.

⚠WARNING

As part of daily inspection, check the oxygen sensor for any sign of deterioration or liquid leakage. If any crack should be found on its external surface, replace it immediately with a new one.

The oxygen sensor is sealed up with a potassium hydroxide electrolyte inside. If it should be dropped and damaged, the electrolyte may leak out. If the electrolyte should stick to the skin or the clothes, wash your eyes immediately with a lot of water, and consult the doctor.

Dispose of a used oxygen sensor in accordance with an appropriate disposal procedure.

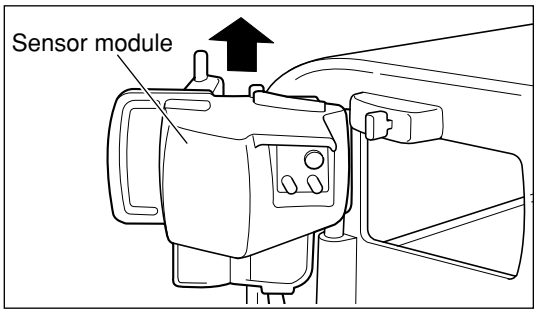
⚠CAUTION

Replace the two oxygen sensors at the same time.

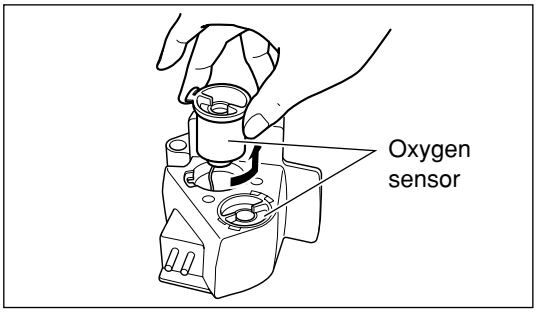
The oxygen sensor may be defective when the oxygen sensor indicator illuminates. Replace the old oxygen sensors with new ones.

Avoid giving a mechanical shock to the sensors when replacing them.

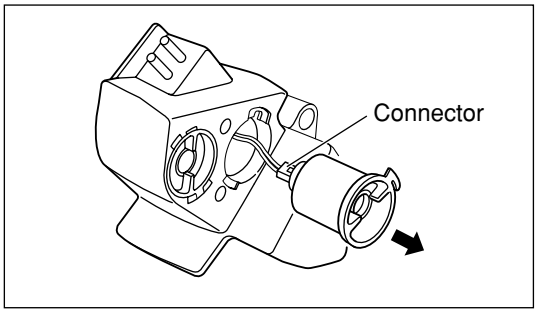
(1) Remove the plugs of the two cables of the sensor module from the relay box. Pull the sensor module out of the hood, lift it up and remove it from the hood.



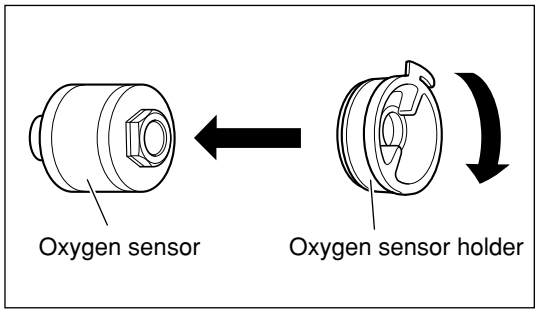
(2) Remove the two oxygen sensors from the sensor module by turning them respectively counterclockwise.



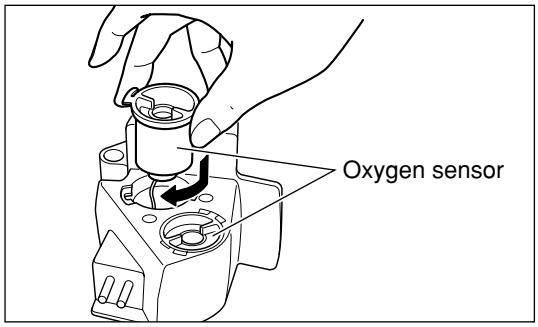
(3) Remove the connector from the old oxygen sensor.



(4) Remove the oxygen sensor holder from the old oxygen sensor. Obtain a new oxygen sensor and attach the oxygen sensor holder to it.



(5) Connect the connector to the new oxygen sensor, place the new oxygen sensor in the sensor module and turn it clockwise to attach it as before.
Attach the sensor module to the hood, and connect the two connectors of the cables to the appropriate connecting ports on the relay box.



10-6. Inspection Check List

Serial NO. ( )	Date of inspection (. .)	Inspector ( )
NO.	Item to check	Judgement
Inspection before use (every time)		
1	Are the main body and the hood free of breakage?	YES / NO
2	Is the main body fixed securely to the cabinet or the HL stand?	YES / NO
3	Are the access port covers free of breakage and attached securely?	YES / NO
4	Are the access port packing fixed securely to the hood?	YES / NO
5	Are the tube introduction slit assembly packings free of breakage and attached securely?	YES / NO
6	Is the sensor module free of breakage, not loose and fixed securely?	YES / NO
7	Does the oxygen sensor show any sign of damage, deterioration or leakage?	YES / NO
8	Is the front admittance panel operating knob not loose? Does it operate reliably?	YES / NO
9	Are the access port hook sliders not loose? Do they operate reliably?	YES / NO
10	Does the tilting mechanism operate smoothly?	YES / NO
11	Does the power switch turn the power on/off reliably?	YES / NO
12	Do all LEDs turn on and does the audible alarm sound when the test switch is pressed?	YES / NO
13	Does the filter look blackish and dirty?	YES / NO
14	Are all labels and caution seals affixed?	YES / NO
15	Is the Operation Manual readily accessible?	YES / NO
Three-month inspection		
1	Is the displayed value stable at set point of 36.0 ± 1℃ in manual control?	YES / NO
2	Is the displayed value stable at set point of 36.0 ± 0.5℃ in servo control?	YES / NO
3	Is the displayed value stable at the set point of 90 ± 5% in humidity control?	YES / NO
4	Is the oxygen concentration 65% or higher at 10L/min?	YES / NO
5	Is the displayed value stable at set point of 40 ± 2% in oxygen concentration control?	YES / NO
6	Does the weight monitor display a numerical value in the range of the weight 5000 ± 5g?	YES / NO
7	Do the low water level alarm indicator and the humidity chamber off alarm indicator come on?	YES / NO
8	Is the fan free of any breakage ?	YES / NO

⚠WARNING

If any trouble is detected in any inspection, indicate on the unit that it is out of order, and have it repaired without fail.

Contact Atom Medical Corporation or your local distributor for further information on servicing or repairs.

10-7. Life

The life of the unit is 6 years. Beyond this period, repairs including overall replacement of parts must be carried out.

10-8. Disposal

The main body and any parts beyond the life and disposables should be disposed of as medical waste after disinfection on sterilization according to applicable laws.
The unit contains button type Ni-Cd rechargable batteries, lithium batteries for weight monitor and oxygen sensors inside. When you dispose the unit, observe applicable laws and handle accordingly.

[11] Alarms

⚠WARNING

This incubator is provided with the following alarms. If an alarm condition should occur, check for a possible cause of the alarm. If the incubator seems to be defective, it is in need of repairs. Indicate on the incubator that it is out of order and contact your Atom distributor.

11-1. High Temperature Alarm

In the Manual Control mode, the indicator will illuminate and a continuous audible alarm will sound if the incubator air temperature exceeds the maximum setting temperature at 37.0℃ but before exceeds 38.0℃, or 40.0 ℃ in the override mode. In the Servo Control mode, the indicator will flash and a continuous audible alarm will sound if the incubator air temperature exceeds the maximum setting temperature at 37.5℃, or 39.0 ℃ in the override mode but before exceeds 40.0℃.

Action to take: If the top board is not placed properly, the high temperature alarm may occur even when the alarm limit has not been exceeded. If no trouble is found with the top board, the incubator should be regarded as out of order.

Alarm reset: The audible alarm cannot be silenced and the alarm cannot be reset unless the normal condtion returns.

11-2. Temperature Set Point Alarm

■ During Manual Control operation

If the incubator air temperature exceeds or falls below the set temperature by 3℃ or more, the indicator will illuminate, the incubator air temperature display will flash, and an audible alarm will sound. Power supply to the heater will be shut off if the incubator air temperature exceeds the set temperature by 3℃ or more; it will not be shut off if the incubator air temperature falls below the set temperature by 3℃ or more.

Action to take: Is the top board placed properly? Is an air outlet, an air inlet or the incubator air temperature sensor covered with diapers, etc.? If no trouble is found with the above items, the incubator should be regarded as out of order.

Alarm reset: Press the alarm reset switch, and the alarm silence indicator will illuminate and the audible alarm will be silenced (for 15 minutes).
If another alarm should occur while the audible alarm is silenced, the audible alarm will be reset automatically and begin to sound. The alarm will be reset automatically and stop if the normal condition has returned.

■ During Servo Control operation

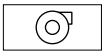
If the infant's skin temperature exceeds or falls below the set temperature by 1℃ or more, the indicator will illuminate, the skin temperature display will flash, and an audible alarm will sound. Power supply to the heater will be shut off if the skin temperature exceeds the set temperature by 1℃ or more; it will not be shut off if the skin temperature falls below the set temperature by 1℃ or more.

Action to take: Is the skin temperature probe attached securely?
Is it covered with diapers, the infant's arm, etc.? Is it wet with the infant's urine, disinfec tant fluid, etc.? Is the infant feverish? If no trouble is found with the above items, the incubator should be regarded as out of order.

Alarm reset: Press the alarm reset switch, and the alarm silence indicator will illuminate and the audible alarm will be silenced (for 15 minutes).
If another alarm should occur while the audible alarm is silenced, the audible alarm will be reset automatically and begin to sound. The alarm will be reset automatically and stop if the normal condition has returned.

⚠ CAUTION

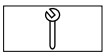
The unit is so designed that the set point alarm does not activate for 50 minutes after power is applied to the unit, after the set temperature is changed to another level, or after the unit is switched from the Servo Control mode to the Manual Control mode.
However, the set point alarm will begin to activate even within 50 minutes of the above-mentioned events if the incubator air temperature should exceed, or fall below, the set temperature.

11-3. Fan alarm 

If the fan provided for air circulation in the incubator has stopped or isn't attached properly, or if the fan cover or the top boad isn't attached, the indicator will illuminate and a continuous audible alarm will sound. At the same time, power supply to the heater will be shut off.

Action to take: Press the power switch to turn power off and check that the fan and the fan cover are attached properly. If the fan operates normally when the power switch is pressed and power is applied to the unit again, the alarm will be reset.

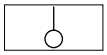
Alarm reset: The audible alarm cannot be silenced.

11-4. System Failure Alarm 

If any trouble should occur to the high temperature sensor or the incubator air temperature sensor, the indicator will illuminate and an audible alarm (continuous) will sound. At the same time, power supply to the heater will be shut off.

Action to take: A sensor or a sensor block connector may not be connected properly. Turn power off and check the connection of the sensor block cables. If all the connections are found to be made properly and yet the system failure alarm still occurs when power is applied again, the incubator should be regarded as out of order.

Alarm reset: The alarm cannot be reset during the alarm condition.

11-5. Skin Temperature Probe Alarm 

■ During Manual Control operation

If any trouble should occur to the skin temperature probe, the indicator will illuminate and an audible alarm (continuous) will sound.

Action to take: The skin temperature probe may be faulty.

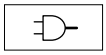
Alarm reset: Press the alarm reset switch, and the alarm silence indicator will illuminate and the audible alarm will be silenced.
If another alarm should occur while the audible alarm is silenced, the audible alarm will be reset automatically and begin to sound.

■ During Servo Control operation

If the skin temperature probe connector should be disconnected, or if any trouble should occur to the skintemperature probe, the indicator will illuminate and an audible alarm (continuous) will sound. At the same time, power supply to the heater will be shut off.

Action to take: Check the connection of the skin temperature probe connector. If no trouble is found with the connection, the incubator should be regarded as out of order.

Alarm reset: The alarm cannot be reset during the alarm condition. After the normal condition has returned, press the alarm reset switch to reset.

11-6. Power Failure Alarm 

If power supply should be interrupted due to power breakdown, a disconnected power plug, a broken power cord, a tripped circuit breaker or other causes, the indicator will illuminate and an audible alarm will sound.

Action to take: Check the connection of the power supply, the system circuit breaker, and the circuit breaker of the hospital. If no trouble is found with the above items, the incubator should be regarded as out of order.

Alarm reset: The alarm cannot be reset unless the normal condition returns.

⚠ CAUTION

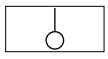
If the power supply is interrupted due to a power failure, disconnection of the power plug or the like, the humidity control and oxygen controller do not restart even if power resumes. It is necessary to operate each switch again to reset these functions after power resumes. Press the ON/OFF switch of the oxygen controller for about one second to set the oxygen controller to ON again. The oxygen concentration value which was set before the power interruption is displayed and the oxygen supply resumes. Set the humidity control in the same way.

11-7. Humidity Sensor Alarm

If any trouble should occur to the humidity sensor, the relative humidity display will flash. At the same time, power supply to the heater will be shut off.

Action to take: The humidity sensor may be faulty.

Alarm reset: The alarm cannot be reset unless the humidity sensor is repaired and the normal condition returns.

11-8. Oxygen Sensor Alarm 

The alarm indicator will illuminate if the oxygen sensor was not calibrated properly.

Action to take: Recalibrate. If the oxygen sensor cannot be calibrated properly in recalibration, it may be faulty.

Alarm reset: The alarm will stop if the oxygen sensor is calibrated properly in recalibration.

11-9. Oxygen Concentration Alarm O_2

If the oxygen concentration in the incubator deviates from the set oxygen concentration by more than ± 3%, the oxygen concentration alarm indicator will flash and an audible alarm (continuous) will sound.

Action to take: Check that the access ports and the front admittance panel are closed and that oxygen is sufficiently supplied.

Alarm reset: The audible alarm can be silenced for three minutes by pressing the alarm silence/reset switch. The alarm will sound again after three minutes unless the normal condition has returned.

⚠ CAUTION

The unit is so designed that the oxygen concentration alarm does not activate for 40 minutes after the oxygen controller is turned on or after the oxygen concentration is changed to another level. However, the oxygen concentration alarm will begin to activate even within 40 minutes of the above-mentioned events if the oxygen concentration should reach the oxygen concentration alarm range (set value ± 2%).

11-10. Oxygen Flow Rate Alarm (Flashing oxygen flow rate indicator)

If oxygen supply is interrupted or if oxygen stops flowing for some cause while the oxygen controller is in use, the oxygen flow rate indicator will flash and an audible alarm will sound.

Action to take: Check that the oxygen pipings are connected correctly.
Check that the oxygen supply pressure is within a normal range (294-490kPa, 2-5kgf/cm^2).

Alarm reset: The alarms will be reset automatically if oxygen begins to be supplied normally.

11-11. Low Water Level Alarm

indicator will illuminate if the water level in the humidity chamber has become low.

The alarm lamp of sensor module illuminates in the humidity control mode.

Action to take: Supply additional sterile distilled water to the cartridge tank in the humidity chamber.

Alarm reset : The alarm indicator will go out when the amount of water in the humidity chamber has reached a specified level.

11-12. Humidity Chamber Off Alarm

The indicator will illuminate if the humidity chamber is not positioned properly or the humidity chamber cover is left opened.

Action to take: Position the humidity chamber properly.

Alarm reset: The alarm indicator will go out when the humidity chamber has been positioned properly.

11-13. Relative Humidity Set Point Alarm

If the incubator relative humidity exceeds or falls by 3% or more against the set relative humidity for an hour, the relative humidity display will flash and alarm lamp of the sensor module will illuminate at the same time.

Action to take: Check that the top board is placed properly and there are no diapers, gauze, etc. on the air outlet and/or inlet. Check the all packing attached securely.

Alarm reset: The alarm will be reset automatically and stop if the normal condition has returned.

[12] Troubleshooting

⚠ CAUTION

Check the following points before requesting repair service.

Trouble	Action to Take
Nothing is displayed on the panel when the power switch is pressed ON, and the power failure alarm activates.	● Check the circuit breaker of the incubator. ● Is power connected securely? ● Check the circuit breaker of the hospital (by connecting another electric device to the power outlet used for the incubator).
The incubator air temperature does not rise.	● Is the incubator air temperature set too low? ● Is the supply voltage low? (The incubator should not share a power outlet with another device.) ● Is the air circulating fan attached correctly?
The incubator air temperature rises too high.	● Is the incubator air temperature set too high? ● Is the incubator exposed to direct sunshine or affected by a heating apparatus nearby? ● Is the air inlet in the incubator free from diapers, gauze, etc.? ● Is the incubator air temperature set too low relative to the room temperature? ● Is a phototherapy unit in use?
Humidity does not rise.	● Is the air outlet in the incubator free from diapers, gauze, etc.? ● Is the humidity chamber filled with distilled water? ● Is the Boiler Cap fitted properly? ● Is the Cartridge tank filled with distilled water?
Humidity rises too high.	● Is the relative humidity extremely high due to the rainy season or some other cause?
The oxygen concentration does not rise.	● Is oxygen being supplied reliably (when the oxygen controller is in use)? ● Has the flow rate been set correctly on the oxygen flowmeter? ● Are the access ports closed securely? ● Are all the packing attached securely? ● Is the filter cover attached securely?

⚠ WARNING

If the unit seems to be defective, indicate on the unit that it is out of order, stop using it at once, and contact your Atom distributor.

[13] Technical Data

Power requirements

Main body Rating: AC230V 500VA (Maximum) 50Hz
Voltage range: AC230V ± 10%
HL stand Rating: AC230V 630VA (When actuated) 50Hz
Voltage range: AC230V ± 10%

Classification

Type of protection: Class1.
Degree of protection: Type BF
Not for use in air and flammable anesthetic gas or oxygen/nitrous oxide and flammable anesthetic gas.
Mode of operation: Continuous operation. The HL stand is for intermittent operation (3 minutes per hour).

Operating condition

Ambient temperature: 20-30℃ (68-86 ° F)
Relative humidity: 30-75%
Atmospheric pressure: 76-106kPa

Storing condition

Ambient temperature: 0-50℃ (32-122° F)
Relative humidity: 30-75%
Atmospheric pressure: 70-106kPa

Dimensions

With HL stand: 100(W)X58.5(D)X126.5-146.5(H)cm (Mattress surface 89.5-109.5cm)
With cabinet: 100(W)X58.5(D)X134.5(H)cm (Mattress surface 97.5cm)
Mattress : 74(W)X36(D)X2(T)cm

Weight

With HL stand: Approx. 88kg (Main body:Approx 54.5kg, HL stand:Approx.33.5kg)
With cabinet: Approx. 83kg (Main body:Approx 54.5kg, Cabinet:Approx.28.5kg)

Maximum load capacity

MF rail: 10kg
HL Stand drawer: 5kg/each
IV pole (option):5kg

Accessories

Access port cover 2
Skin temperature probe 1
F-6E electrostatic filter 1
Cap (rubber plug) 1
Dust cover 1
<With oxygen controller>
Oxygen sensor 2
100% oxygen calibration adapter 1
Piping connecting hose 1

■ Temperature control

Temperature control mode	Servo Control/Manual Control also available
Temperature setting range	Skin temperature(Servo Control): 35.0-37.5 ℃(Override mode:37.6-39.0 ℃) Incubator air temperature (Manual Control): 23.0-37.0℃ (Override mode:37.1-39.0 ℃) In 0.1 ℃ increments
Temperature display range	Skin temperature: 30.0-42.0℃ (86-107.6° F) Precision : ± 0.3 ℃ Incubator air temperature: 20.0-42.0 ℃ (68-107.6° F) Precision : ± 0.3 ℃
Heater output indication:	0-100 (in 10 levels)
Warming time:	≦ 60min at ambient temperature 25℃
Alarm	High temperature, set point, power failure, fan, skin temperature probe, system failure

■ Humidity control

Humidity control mode	Servo Control
Humidity setting range	A type : 40-90% RH (in 1% increments) B,C type : 40-95% RH (in 1% increments)
Humidity display range	15-99% RH Precision : ± 5%
Maximum humidity	A type : ≧85% (at ambient humidity 50% RH, ambient temperature 25 ℃, incubator air temperature setting 37℃) B,C type : ≧90% (at ambient humidity 50% RH, ambient temperature 25 ℃, incubator air temperature setting 37℃)
Alarm	Humidity chamber off, low water level

■ Oxygen

Maximum oxygen concentration	≧ 65% (at O_2 flow rate 10L/min)
Achieving time	≦ 30min (from 21% to 60% at O_2 flow rate 10L/min)

■ Environment

CO_2 concentration in the hood	CO_2 concentration when stability has been achieved after administering air mixed with 4% CO_2 to a point 10cm above the center of the mattress at 750mL/min doesn't exceed 0.4%.

■ Oxygen control (Unit with oxygen controller)

Oxygen control mode	Servo Control
Oxygen concentration setting range	22-65% (in 1% increments)
Oxygen concentration display range	15-105%
Response time for oxygen concentration display	30sec (90% response)
Type of oxygen sensor	Galvanic cell type
Accuracy of oxygen concentration measurements	± 2%O_2 in 15-25%O_2 ± 3%O_2 in 25-100%O_2
Stability of oxygen concentration measurements & calibration cycle	24 hours
Calibration	21% or 100%
Alarm	Oxygen sensor, set oxygen concentration
Oxygen sensor life	Approx. 24 months (at the ambient temperature of 25℃ and the ambient oxygen concentration of 21%) ※ The above data is applicable when a new oxygen sensor is attached for use. An incubator is delivered to you with an oxygen sensor already attached. This oxygen sensor is intended to monitor the functions and performance of the incubator including the oxygen sensor itself. Please understand that this oxygen sensor may cease to function before the expected expiry date.

■ Weight monitor (Unit with weight monitor)

Weight display range	300-7000g (in 1g increments) Precision : ± 5g
Function	To store detected weight values in the memory (when the STORE switch is pressed). To give printer output (when the optional printer is connected).

Please contact the Atom distributor from whom you bought this unit for more information and for repair and inspection of the unit.

ATOM

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4. 2004. PRINTED in Japan